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WAR DEPARTMENT

CAVALRY FIELD MANUAL



Volume III

EMPLOYMENT OF CAVALRY

CAVALRY FIELD MANUAL



Volume III

EMPLOYMENT OF CAVALRY

Prepared under direction of the
Chief of Cavalry



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Cavalry Field Manual, Volume III, Employment of Cavalry,
is published for the information and guidance of all concerned.

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BY ORDER OF THE SECRETARY OF WAR:

MALIN CRAIG,
Chief of Staff.

OFFICIAL:

E. T. CONLEY,
Major General,
The Adjutant General.

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VOLUME III

EMPLOYMENT OF CAVALRY

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PART ONE

TACTICAL PRINCIPLES

CHAPTER 1

GENERAL

1. Definition of cavalry.—Cavalry is that combatant arm of the Army organized primarily to perform those missions of ground warfare that require great strategical or tactical mobility combined with fire power and shock.

2. Cavalry corps.—The largest organic body of cavalry is the cavalry corps. It will ordinarily consist of corps troops and two or more cavalry divisions, horse or mechanized. When circumstances so require, it may have attached to it such additional troops including other mechanized elements, infantry (generally in trucks), aviation, medium artillery, engineers, medical troops, and trains as tend to make it independent for major operations but at the same time do not reduce too greatly its mobility as cavalry.

3. **Cavalry division.**—A cavalry division is a complete tactical and administrative unit containing one or more brigades of two or more regiments of cavalry (horse or mechanized) each, and additional troops including artillery, engineers, and service elements. It may be assigned an independent mission and so operate far from other troops. It may be assigned to a cavalry corps or attached or assigned to a corps (infantry), an army, or a group of armies, or be held in general headquarters reserve.

4. **Army cavalry.**—Army cavalry is an organic part of the field army.

a. Strength.—The actual cavalry strength assigned to an army in time of war will depend upon the mission of the army, the suitability of the terrain for the employment of cavalry, and upon the amount of cavalry, both horse and mechanized, available for the assignment.

b. Disposition.—As a rule, the army commander retains control of the army cavalry for employment on army missions. He may, however, attach portions of it to his corps.

c. Organization.—The role of the cavalry in any particular operation determines whether the divisions shall be combined into a cavalry corps or shall operate as separate cavalry divisions.

5. **Corps cavalry.**—Cavalry that is attached to, or is an organic part of, a corps (infantry) is termed corps cavalry. The normal duty of corps cavalry is to gather information for the corps commander upon which to base tactical dispositions and maneuvers and to furnish security.

6. **Division cavalry.**—Cavalry that is attached to, or is an organic part of, an infantry division is termed division cavalry. Its primary functions are reconnaissance and security. In the advance it will perform distant reconnaissance for the division in conjunction with the division aviation. When contact with the enemy is imminent, all or part of it may perform close reconnaissance in cooperation with or as a part of the advance guard. During battle it will perform battle reconnaissance and security missions. These missions, mainly, will be to determine the enemy's dispositions or movements in time for the division commander to dispose his troops or reserves to meet the situation.

7. Characteristics.—*a.* The characteristics of cavalry are mobility, fire power, and shock.

(1) *Mobility.*—(*a*) Battlefield mobility in a war of movement is its most distinctive characteristic. Strategic mobility is inherent in mechanized cavalry. For strategic movements with motorized forces, either rail or truck transportation must be provided for the horses of horse cavalry. Horse cavalry, having arrived in the desired theater of operations or designated locality, at once regains its battlefield mobility. The mobility of cavalry, especially mechanized elements, permits it to shift quickly from one point to another in the theater of operations or to operate over a wide area and at a great distance from supporting forces. On the battlefield, cavalry's mobility enables it to concentrate rapidly for a decisive attack or to withdraw quickly in order to renew the action elsewhere.

(*b*) Horse cavalry gains its mobility from its mounts.

(*c*) Mechanized cavalry gains its mobility from its vehicles.

(2) *Fire power.*—The distinguishing feature of cavalry fire power is its flexibility and maneuverability on and near the battlefield. Due to its method of transportation, this fire power can be easily and quickly maneuvered in accordance with the rapidly changing situations that characterize cavalry combat.

(3) *Shock.*—Shock, considered as a characteristic of cavalry combat, implies collision, mounted or mechanized, as distinguished from dismounted assault. Its effectiveness depends primarily upon the elements of mass, speed, and surprise.

b. Prior to as well as during combat cavalry action is characterized by mounted maneuver. Development for combat is habitually made mounted. Even during dismounted combat, mounts and vehicles are habitually kept as close at hand as the terrain and situation permit.

8. Armament.—The armament of cavalry is such that it can deliver quickly an intense and effective fire for comparatively short periods.

9. Combat.—Cavalry is organized, trained, and equipped to fight mounted or dismounted or in combined mounted and dismounted action. It delivers combat when acting alone or in conjunction with elements of larger units of which it may be a part or to which it may be attached. It is especially adapted to combat missions requiring rapidity of attack and to delaying

actions. Horse cavalry organization does not suit it for dismounted deployment in the depth habitual with infantry. However, its combat missions usually permit a reduced depth and a relatively extended frontage. In any combat situation cavalry takes full advantage of its mobility and the maneuverability of its fire power.

10. Missions.—Cavalry should be assigned missions for which its characteristics fit it and, except in emergencies, should not be assigned missions which can be performed better by other arms. The tasks for cavalry include—

- a.* Reconnaissance and counterreconnaissance.
- b.* Security for other forces on the march, at the halt, and in battle.
- c.* Pursuit and exploitation of a break-through.
- d.* Delaying action.
- e.* Seizing or holding important terrain until the arrival of less mobile forces.
- f.* Covering the withdrawal of other forces.
- g.* Providing liaison between large units.
- h.* Raids.
- i.* Escorts for convoys.
- j.* Constituting a mobile reserve for other forces.
- k.* Offensive and defensive combat.

11. Command and leading.—*a.* Cavalry leaders must be energetic, enterprising, and always ready to seize opportunities for the employment of their commands in furtherance of the plan of the higher commander. They must be quick to estimate a situation and able to make known their decisions promptly in clear, concise orders.

b. The initiative of subordinates must be developed in order that they may be prepared to act promptly and correctly in any situation not covered by detailed instructions.

c. Personal reconnaissance should be made by commanders of all bodies of cavalry prior to and during combat.

d. Cavalry orders should be brief, clear, and as complete as time and circumstances permit. Due to rapidly changing situations, it is frequently necessary for the commander to issue his orders orally in fragmentary form. Such orders, however brief as to detailed instructions, must always indicate clearly the commander's scheme of maneuver.

e. The mobility of horse cavalry depends upon the condition of its mounts. Therefore care of the horses is a primary consideration of commanders and their subordinates. In mechanized cavalry the care of its vehicles is equally important.

12. Plans and instructions by higher commanders.—a. The mission of the cavalry is prescribed by the commander of the organization of which the cavalry is a part or to which it is attached.

b. Orders for the employment of cavalry are embodied in the field orders of the command with which the cavalry is operating. The mission is stated in definite terms so there can be no doubt as to the results expected. The methods of performing the mission are left largely to the cavalry commander. In principle the cavalry is assigned only one mission at a time. Frequently, however, this is not possible, and when more than one mission is assigned, the relative importance of the missions and any special considerations to be borne in mind during the execution of each are indicated clearly.

c. When the mission of the cavalry requires an extended operation covering several days or is one in which rapid communication probably cannot be maintained, such instructions as are necessary for the guidance of the cavalry commander may be issued in the form of a letter of instructions, which includes the following:

(1) All pertinent information of the enemy and of friendly troops.

(2) The general plan of the commander of the whole force.

(3) The mission of the cavalry and such special instructions regarding the accomplishment of the mission as may be necessary.

(4) Special considerations, if any, that may influence the cavalry commander in his method of executing his mission and the subsequent movements of his command.

(5) The cooperation to be furnished by other units, particularly the aviation.

(6) A general plan of supply for the operation.

(7) The location and probable movements of the headquarters of the whole force.

13. Terrain.—Terrain has a decisive influence on the use and operations of cavalry. It may be the determining factor in

the selection of horse or mechanized cavalry for certain missions. For either type of cavalry it may affect the decision of the commander and will always govern the formulation and execution of his plan. A thorough knowledge of terrain and its advantages and limitations is essential to the proper command and employment of cavalry.

14. Mechanized cavalry.—*a. Special characteristics.*—(1) The special characteristics of mechanized cavalry include tactical speed, great fire power, and protective armor plate. By virtue of its equipment it is able to perform the normal cavalry missions at great speed.

(2) Its limitations include its vulnerability, limited cross-country ability, and supply and maintenance requirements.

b. Tactical functioning.—The tactical functioning of mechanized cavalry may be divided into four classifications—reconnaissance, striking power, fire support, and defense against hostile antitank weapons. The regiment is the smallest mechanized cavalry organization containing all of these elements.

(1) *Reconnaissance.*—The reconnaissance elements perform reconnaissance missions 50 to 100 miles in advance of the regiment and the subsequent close-in reconnaissance.

(2) *Striking power.*—The combat-car elements furnish the striking power of mechanized cavalry and break the hostile resistance.

(3) *Fire support.*—The machine-gun troop provides the ground fire support in the following ways:

(a) By firing on the crews of the hostile antitank guns.

(b) By displacing forward on the heels of the attack to organize the first objective and cover the assembly and re-formation of the attacking units.

(c) By repelling the counterattack of hostile mechanization.

(d) By covering the withdrawal.

(4) *Defense against hostile antitank weapons.*—The mortar elements lay down smoke on the hostile antitank area to prevent hostile gunners from bringing well-aimed fire on the advancing vehicles. The mortars thus constitute the means of neutralizing hostile antitank weapons, whether these weapons are in position on the ground or mounted in hostile combat vehicles.

c. Methods of fighting.—The mechanized cavalry regiment has two distinct ways of imposing its will on the enemy:

(1) By supported assault of combat cars against a given objective.

(2) By placing combat vehicles in favorable positions from which effective fire can be delivered upon the enemy.

d. Front of attack.—The mechanized attack may be made on a very widely extended front or on a very narrow front, depending upon the terrain and the disposition of the hostile forces. When the attack is made on a narrow front, the mechanized attacking elements normally will be disposed in depth.

e. Speed of movement.—The speed of movement of mechanized cavalry will vary from the slow, covered advance of 7 or 8 miles per hour up to the quick thrust at a speed of 45 miles per hour. The normal rate of march of mechanized cavalry is approximately 25 miles per hour on the road.

CHAPTER 2

RECONNAISSANCE

SECTION I

GENERAL

15. Purpose.—The purpose of reconnaissance is to gain information upon which to base tactical operations or strategical maneuvers.

a. Character of information.—Information desired may be of the enemy or of the terrain. Information concerning the enemy may include his location, dispositions, strength, organizations, capabilities, movements, attitude, equipment, and morale. Information concerning the terrain may include battle positions, character of roads, streams, cover and concealment, and bivouac area.

b. Essential elements of information.—Effective reconnaissance requires that attention be focused on the information which is of greatest importance. To accomplish this, reconnaissance missions should be expressed in specific questions stating the information desired. The essential elements of information are those which the commander deems necessary or highly desirable to—

- (1) Confirm his decision.
- (2) Complete his plan of action.
- (3) Facilitate the execution of his plan.
- (4) Permit him to revise or make a new decision.
- (5) Accomplish his mission.

c. Sources of information.—The sources of information are varied and include actual observation of terrain or physical objects and the examination of inhabitants, prisoners, documents (including aerial photographs), spies, or identifications. Although reconnaissance missions generally require secrecy of movement, it may be necessary to resort to combat for the purpose of obtaining information.

Means of securing information.—Cavalry reconnaissance may be performed by either horse or mechanized cavalry or by a combination of the two. However, the indiscriminate mixing of mechanized and horse cavalry, whose methods of operation are similar but whose characteristics differ, may result in confusion or a reduction in the efficiency of both, unless the employment of each is carefully planned.

16. Missions.—*a. Classification.*—Cavalry is assigned distant, close, and battle reconnaissance missions.

(1) *Distant reconnaissance.*—Cavalry locates the advanced elements of the enemy forces, and when once found it gains and maintains contact with them. This may first entail the defeat of the hostile covering forces. Although distant reconnaissance is also a function of the Air Corps, cavalry can continue its mission under weather conditions that either impede or prevent air operations or against objectives concealed from air observation. Cavalry also furnishes the most reliable negative information.

(2) *Close reconnaissance.*—Close reconnaissance seeks to gain more detailed information for tactical operations, such as the location, strength, composition, and movements of the enemy and a reconnaissance of the terrain.

(3) *Battle reconnaissance.*—Cavalry usually seeks the hostile flanks and rear to gain information of hostile reserves, counter-attacks, and routes or indications of a withdrawal.

b. Missions for large forces.—Missions of reconnaissance for large forces, such as armies, are carried out usually by cavalry divisions; for smaller forces, by commands varying in strength from a small patrol to a brigade.

c. Zones, localities, and routes.—(1) When a higher commander assigns a reconnaissance mission to cavalry, he may assign a zone of action or designate a locality or area or assign an axis or route. The boundaries thereof are not to be construed as limiting the movements of the units but rather as definite guides as to areas of responsibility for reconnaissance. The smaller the element, the more definitely must the limits be prescribed in order to insure control, but the maximum liberty of movement that the situation warrants should be allowed.

(2) Forward movement of reconnaissance detachments and the main body is executed by bounds based on control lines prescribed in the orders of the cavalry commander.

(3) The main body of the cavalry advances on its objective in one or more columns, preceded by its reconnaissance detachment or detachments. The main body is not restricted to a central direct route but may advance by a flank or circuitous route if the terrain or enemy situation make this desirable, especially in the interest of surprise.

(4) When the enemy is disposed on a broad front or when his location is in doubt, a zone of action may be assigned. Factors to be considered in determining the width of the zone of action are the terrain; the road net; strength of the forces to be employed; strength, disposition, and activity of the enemy; attitude of the civil population; and the particular mission of the cavalry.

(5) When accurate information has disclosed the presence of the enemy in a definite area, then that locality or area is assigned for reconnaissance.

(6) When information indicates the enemy's advance is by a definite route (or routes), a route (or routes) for reconnaissance is generally designated. The presence of inaccessible terrain features, such as lakes, mountain passes, etc., may also make it advisable to assign routes for reconnaissance, even though zones of reconnaissance would otherwise be preferable.

17. Cavalry with infantry.—When cavalry is attached to or is an integral part of a corps, division, or brigade, it operates under the direct control of that unit commander. Its mission should be reconnaissance and security. (See par. 289.)

18. Cooperation with aviation.—*a.* The aviation can usually provide early information of the enemy's general dispositions and movements; but when the aviation is prevented from obtaining this information, cavalry must be prepared to extend its reconnaissance to secure it. Each arm supplements and assists the other and team play is essential.

b. Cavalry should have the cooperation of aviation. Aviation will be used by the cavalry commander to locate the enemy's concentrations and detachments. These being known, he can determine the directions his ground reconnaissance should take and the strength necessary for each reconnaissance

detachment. Aviation is also used to report the positions of friendly reconnaissance detachments. It is important that small units, to include reconnaissance detachments, be able to communicate with these planes in order to receive information, to

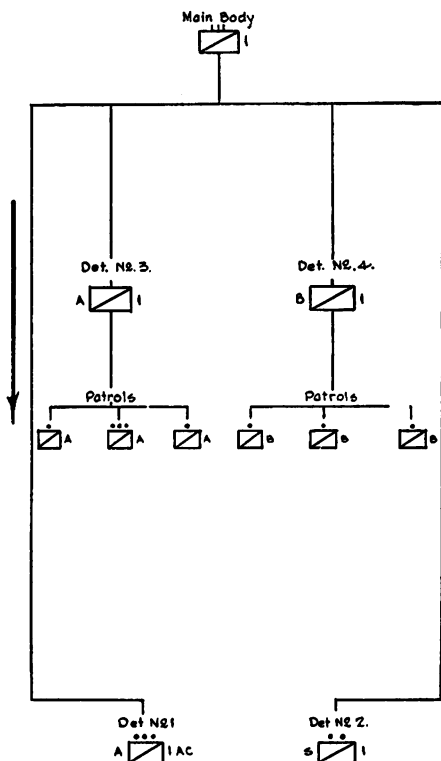


FIGURE 1.—Relative locations of units of a regiment of cavalry, with a platoon of armored cars attached, on reconnaissance. (Not drawn to scale.)

request air reconnaissance in designated directions, or to ask for assistance from supporting troops. Communication from air to ground is usually accomplished by dropped messages and radio;

from ground to air by radio, pick-up messages, and by a pre-arranged system of panel signals.

19. Hostile aviation.—When the enemy's aviation is active and concealment is vital to success, movements by cavalry units engaged on reconnaissance must be made at night and from one place of concealment to another.

20. Reconnaissance instructions.

1. SITUATION.—(So much of the information normally contained in paragraphs 1 and 2 of a formal field order as will be of value to the CO of a Rec. Det.)

2. RECONNAISSANCE AGENCIES.

———, ——— Observation squadron.

Reconnaissance of zone or area: — *M* to — *M*.

Zone boundaries:

Missions (in order of priority) and time reports to reach CP:

Detachment no. —:

Hour departure:

Zone boundaries: (Area, axis, or route.)

Objectives: *Time to be reached:*

Axis of march:

Missions (in order of priority) and time reports to reach CP:

Duration:

Detachment no. —:

Hour departure:

Zone boundaries: (Area, axis, or route.)

Objectives: *Time to be reached:*

Axis of march:

Missions (in order of priority) and time reports to reach CP:

Duration:

3. GENERAL REMARKS.—(Information contained in paragraphs 3 *x*, 4, and 5 of a formal field order; i. e., trains, supplies, communication, CP's of main body, etc.)

4. FORM.—(A list of the information which should be included in the instructions to reconnaissance agencies.)

SECTION II

HORSE CAVALRY

21. Methods of operation.—Different methods of operation are required for the conduct of horse cavalry reconnaissance, depending upon whether the general situation is one preceding battle, during battle, or after battle.

a. Preceding battle.—(1) In the early stages of the advance of an army, the mechanized cavalry working in conjunction with the army aviation may be employed to determine the attitude, strength, composition, dispositions, and movements of the enemy. When mechanized cavalry is not available, the horse cavalry will perform these missions by employing the mechanized elements which are an integral part of the cavalry division and regiment. While this reconnaissance is directed primarily at the hostile main forces, the operations disclose early the nature and extent of the activities of the enemy's covering and reconnaissance forces.

(2) The main body is preceded by reconnaissance detachments and patrols. As these advance elements gain contact, minor engagements decrease their rate of advance. Ordinarily the uninterrupted advance of the main body makes possible the further advance of the detachments.

(3) The cavalry commander, by means of reports called for at specified hours or special reports, keeps the higher commander informed of the progress and results of reconnaissance.

(4) In the distribution of forces for reconnaissance and the assignment of missions, due consideration is given to areas of decisive importance. Greater strength and more aggressive missions are assigned to forces operating in the more decisive zones.

b. During battle.—When moved to a flank, the bulk of the cavalry is usually placed on the flank which is the most vulnerable to enemy attack. Its reconnaissance is performed by patrols and reconnaissance detachments supported, when the situation requires it, by the main body of the cavalry.

c. After battle.—(1) When the battle results in withdrawal of the enemy, cavalry reconnaissance elements move either around the flank or through a gap in the hostile line to determine the routes of withdrawal of the hostile main column;

whether his withdrawal is well organized, or in disorder; the covering positions with reference to his columns; and whether or not critical points on his routes are held in strength. Contact must be maintained.

(2) When the battle results in the withdrawal of our own forces, cavalry extends its flank reconnaissance to obtain information of the direction of the main threat of the enemy's pursuit or exploitation.

22. Zones.—A cavalry division may be assigned a zone of reconnaissance which ordinarily does not exceed 50 miles in width; a regiment, 15 miles. In turn, each redistributes its zone to reconnaissance detachments. When zones are assigned, the successive lines that the patrols and detachments are to reach from day to day and the general route of reconnaissance within each zone may also be designated.

23. Detachments.—*a.* Reconnaissance detachments are employed when it becomes necessary to have a self-sustained unit well to the front; units able to reach distant objectives break through hostile resistance, and obtain and transmit the desired information. They receive orders and instructions from, and report directly to, the cavalry commander.

b. Reconnaissance detachments are not charged with providing security for the main body of the cavalry. The main body and the detachments provide their own security.

c. Instructions to reconnaissance detachments are issued in writing. They contain the information and instructions usually promulgated in field orders. They state definitely the information desired, the place and latest hour at which it must be received, the route to be followed, or the zone of reconnaissance and the line which patrols or detachments, or both, are to reach daily. Where several missions are given, their relative importance is stated.

d. The main duties of detachments are to push forward in search of information in accordance with assigned missions; to overcome or avoid hostile resistance encountered; to gather, sort, and transmit information; and to detail, assign duties to, support, and relieve patrols as the situation requires.

e. (1) The strength of a reconnaissance detachment depends upon its mission, the distance it must travel, the number of

patrols it must furnish, the terrain, the attitude of the civilian population, and the strength and activity of the enemy.

(2) Troops or squadrons are usually detailed as reconnaissance detachments. Under exceptional circumstances a regiment may be detailed for this purpose.

f. (1) It is usual to attach intelligence personnel and radio sections to reconnaissance detachments for the purpose of sorting and transmitting rapidly the information gained. Authority should also be given to impress motor vehicles in the zone of reconnaissance.

(2) Heavy machine guns, caliber .50 machine guns, and 37-mm guns may be attached to reconnaissance detachments in the proportion normal to the size of the detachment. Thus a troop may have a section of heavy machine guns and a section of caliber .50 machine guns attached and a squadron may have a platoon of heavy machine guns, a platoon of caliber .50 machine guns, and a 37-mm gun attached. However, the presence of light machine guns in the rifle troop makes it less necessary than formerly to attach heavy machine guns to the rifle troop. These weapons normally march with the main body of the detachment, the heavy machine guns and the 37-mm guns together. The former are used in accordance with the principles of their use in offensive action, the latter against enemy machine guns. The caliber .50 machine guns are so disposed as to protect the front, rear, and flanks of the detachment against hostile mechanization. The caliber .50 machine gun may have a secondary mission of antimachine-gun fire and the 37-mm gun a secondary mission of antimechanization fire.

g. In determining the number of reconnaissance detachments to be employed the following factors are considered: Mission of the main body of cavalry; front of reconnaissance assigned; possible hostile reaction to the reconnaissance; and nature of the terrain, including the road net. The strength of the main body is conserved by reducing to the minimum the number of detachments.

h. (1) The extent of front or area covered by a reconnaissance detachment depends upon the mission, amount of resistance expected, and the road net. The zone assigned a squadron rarely exceeds 10 miles in width; a troop, 5 miles. The more active the enemy the narrower is the zone assigned to a recon-

naissance detachment. A reconnaissance detachment covering a zone cannot be expected to advance over $3\frac{1}{2}$ to 4 miles per hour.

(2) When it is known that the enemy is in a certain locality or when his advance is confined to a certain route (or routes), the detachments are given routes of advance instead of zones.

i. (1) Reconnaissance detachments advance by bounds. When the enemy is distant, the bounds are usually long. When combat with the enemy becomes imminent, the bounds become short and the halts are long enough to give time for reconnaissance.

(2) The distance between a reconnaissance detachment and the main body of the cavalry may vary from a few hours' to several days' march. It is limited by the fact that the main body must be able to utilize the information obtained.

(3) Factors affecting the distance covered in a day are the location of the line that patrols are ordered to reach daily; distance patrols must travel to secure required information; proximity and aggressiveness of the enemy; length of march of the main body of cavalry; and the general factors of terrain and weather.

(4) The duty demanded of reconnaissance detachments is arduous. Under favorable circumstances a detachment may remain on this duty for several days. Large reconnaissance detachments, as a rule, remain on this duty for longer periods than small detachments.

(5) When a reconnaissance detachment is stopped or driven back, the main body of the cavalry goes to its assistance only in case of necessity.

(6) When the main body of the cavalry engages in combat, some reconnaissance detachments may be too far distant to participate. The enemy's concentration for combat with the main body generally affords a reconnaissance detachment the best opportunity to carry out its mission.

(7) The commander of a reconnaissance detachment determines the number of patrols necessary, their strength, routes, objectives, time of departure, time and place of reporting, and the mission assigned to each. The number of patrols required depends upon the road net, the character of the terrain, the number of localities, and the extent of territory to be recon-

noitered. The strength employed on patrol duty usually will not exceed one-third of the strength of the reconnaissance detachment. This ordinarily affords reasonable combat strength in the main body of the detachment and permits the patrols to be relieved daily.

(8) Although a reconnaissance detachment may, when necessary, go to the assistance of one or more of its patrols, it normally relies upon its own continued advance to reduce resistance to the progress of its patrols. In each case, the detachment commander decides upon the proper course of action.

(9) Messages from patrols, prisoners, inhabitants, and documents are examined by the reconnaissance detachment commander and information is forwarded to the main body by the quickest and most reliable means available. Radio, automobiles, armored cars, scout cars, mounted messengers, motorcycles, and impressed motor transportation may be used. In friendly or occupied territory, commercial wires should be used whenever practicable.

(10) Captured prisoners are promptly evacuated by such means as are available, together with a digest of their individual statements.

(11) On signal from a friendly airplane, a reconnaissance detachment displays its identification panel for the purpose of receiving messages or reporting its location.

24. Patrols.—*a.* Reconnaissance patrols receive their orders from the commander of the reconnaissance detachment to which they belong. Definite objectives and missions are assigned patrols.

b. (1) The strength of a patrol varies from a few men to a platoon, depending upon the amount of resistance expected, the probable number of messages required, and the strength of the detachment which furnishes the patrols. When the enemy is aggressive or the inhabitants actively hostile, a patrol may consist of an entire platoon with a light machine-gun squad attached; otherwise, the usual strength is a squad or half squad.

(2) Important patrols and those operating at a considerable distance from a reconnaissance detachment are commanded by officers.

c. (1) A patrol having a distant mission usually moves out one or two hours earlier than its reconnaissance detachment.

This affords the patrol sufficient time to complete its reconnaissance and render reports without causing delay to the reconnaissance detachment.

(2) As a rule, patrols are relieved every 24 hours.

d. Patrols should be required to furnish positive or negative reports at designated hours or upon reaching certain points. This furnishes detachment commanders a check on the progress of their patrols. Failure to receive such reports will indicate a necessity of supplementary reconnaissance measures. The coordination of advance of the various patrols is usually unnecessary and contact with adjacent detachments is not generally maintained.

e. (1) The duty of reconnaissance patrols is to secure and transmit information to the commander sending them out.

(2) A patrol follows a general route or axis outlined by specially designated points requiring reconnaissance. Between these designated points the patrol selects its own route.

(3) A patrol must be sufficiently aggressive to accomplish its mission, but its greatest chances of success lie in its use of stealth.

(4) A patrol moves by bounds from one observation point to another, halting at each to observe. When contact with the enemy is imminent, it moves generally by unfrequented roads or across country, keeping the main roads under observation. In open country bounds will be long and progress rapid. In close country bounds will be short and progress slow.

(5) When prisoners are desired for purposes of identification the orders to a patrol should state that fact.

(6) Prisoners and inhabitants are questioned and are sent to the commander sending out the patrol. The enemy's dead are searched for insignia, identifications, and documents.

(7) Communication between a reconnaissance detachment and its patrols is normally by mounted messenger and available scout cars.

25. Armored and scout cars.—a. Armored cars and scout cars are valuable reconnaissance agencies during daylight. Their mobility at night on reconnaissance is limited.

b. Armored cars and scout cars are employed alone or aided by aviation to gain contact with hostile forces or to patrol a line which the enemy must cross.

c. When a zone of reconnaissance is assigned a cavalry command, patrols of armored cars or scout cars are sent over the main routes leading toward the objective. This permits rapid reconnaissance over a wide front and to a considerable distance.

d. When the advance of armored cars or scout cars is stopped by hostile resistance, the cars should be directed to continue the reconnaissance to the flanks and rear of the hostile forces.

e. Control is secured by radio communication, by aviation, by use of cars and motorcycles, by designated phase lines or successive objectives, or by the assembly of units at designated localities at prescribed times.

f. Armored cars and scout cars do not replace cavalry reconnaissance detachments. They are a means of extending and facilitating the work of these detachments. Armored cars are seldom attached to reconnaissance detachments. Scout cars are frequently attached.

g. The speed of zone reconnaissance depends upon the available road net. A platoon of armored cars or a unit of scout cars of similar strength assigned a zone about 5 miles in width, containing three or four axial roads and frequent lateral roads, can reconnoiter the zone at the rate of from 10 to 15 miles per hour.

h. A reserve of cars is retained for unforeseen additional missions and to replace losses.

i. The length of missions is coordinated with the problem of future supply of gasoline and oil, rest of personnel, and reserving and maintenance of cars.

j. Normally combat cars are not used on reconnaissance missions for other than battle reconnaissance.

SECTION III

MECHANIZED CAVALRY

26. Employment.—*a.* Detailed reconnaissance of a large area is usually impracticable. The usual objectives are hostile main forces and principal terrain features. The circumstances under which mechanized cavalry is employed on reconnaissance are such that combat may usually be anticipated.

b. A mechanized cavalry regiment or brigade may be employed on reconnaissance for a larger force under conditions as follows:

(1) When the air situation or other factors prohibit aerial reconnaissance.

(2) When the area or hostile dispositions to be reconnoitered are at such distance or hostile troops are in such strength as to prevent other ground agencies from conducting the reconnaissance.

(3) When the enemy is strong in mechanization.

27. Methods of operation.—*a.* Mechanized cavalry operates under the same principles as horse cavalry and may be guided by the methods set forth in section II for horse cavalry.

b. Reconnaissance operations at night are generally restricted to movements of elements to initial positions from which they may continue or commence operations at dawn. Night reconnaissance limits observation and requires slower speeds and more extensive dismounted observation. Night reconnaissance by armored cars is limited to roads.

c. Reconnaissance covering the entire width of the zone of reconnaissance is carried out by the reconnaissance troop with the regiment following on one or more axial roads. For the purpose of giving the regimental commander ample opportunity to utilize to the fullest extent the early information of enemy furnished him by the reconnaissance troop, the reconnaissance troop should precede the regiment by at least 2 hours. Close or detailed reconnaissance of important features may be executed by a detachment of machine-gun elements from the main body or at times by motorcycle scouts. In order to make a close reconnaissance of an area without disclosing the presence of the armored vehicles, it often becomes necessary to dismount and proceed on foot to the objective.

d. The advance of the main body is similar to any tactical march except that detailed reconnaissance of important areas not covered by the armored-car elements is made from the main body.

e. To insure and facilitate the success of its further operation and lacking exact information of hostile dispositions, mechanized cavalry will frequently attack objectives which may prove not to be held in force by the enemy. In order to do

this, the mechanized cavalry assumes an attack formation and proceeds to the objective prepared to overcome any opposition which may be encountered.

28. Air cooperation.—*a.* Air cooperation is exceptionally important to mechanized cavalry.

b. The speed of ground operations of mechanized cavalry precludes careful reconnaissance of areas off the main roads. Hostile troops concealed along the route of advance can frequently be detected by air observation.

29. Detachments and patrols.—*a.* A mechanized cavalry unit usually employs its armored car element, or part of it, as a reconnaissance detachment.

b. If hostile mechanized counterreconnaissance is anticipated, a reconnaissance detachment may comprise a troop of combat cars with armored car platoons attached; in this case, the combat car units are used to reinforce the reconnaissance of the armored car platoons.

c. Engineer reconnaissance personnel, if available, accompanies each detachment and may be attached to patrols.

d. A reconnaissance detachment should be allowed an ample initial start on the main body; this will vary with the situation and terrain.

e. Control is exercised by the designation of control lines to be reached by patrols at prescribed times. Control lines may be designated by the regimental or higher commander; if not, they are designated by the detachment commander who may supplement the instructions of higher commanders.

SECTION IV

SELECTION OF HORSE OR MECHANIZED CAVALRY

30. Suitability for missions.—When both horse and mechanized cavalry are available for reconnaissance, missions are assigned to that element of the cavalry which, due to its characteristics, is best suited to perform that particular mission. Consideration must always be given to the conservation of horses. Following are examples of the proper missions for each:

a. Horse cavalry.—(1) For the less distant missions.

(2) To cover areas or roads that are not accessible to the mechanized units.

(3) To supplement information already gained either by air or mechanized units.

(4) To gain information where secrecy of the movement is essential in order to obtain it.

b. Mechanized cavalry.—(1) Missions involving the longest distances, widely separated localities, large road net, or unusually large area that must be covered.

(2) Distant reconnaissance in force.

(3) When the time element is vital and accomplishment of the commander's plan depends upon the information reaching him before a certain time.

CHAPTER 3

SECURITY

SECTION I

GENERAL

31. Definition.—Security embraces all measures taken by a command to protect itself from surprise, observation, and interference by the enemy.

32. Security measures.—Security measures for mechanized cavalry are in general the same as for horse cavalry.

a. The principal security measures against ground forces include reconnaissance, the employment of security detachments, the distribution of troops, and utilization of terrain. Road reconnaissance is of particular importance for mechanized cavalry.

b. The principal measures against hostile aviation include indirect measures, such as distribution into small groups, night marches, concealment, and camouflage; and direct measures, such as the employment of friendly aviation, antiaircraft weapons, and organic weapons adapted to antiaircraft fire.

33. Security detachments.—*a.* Security detachments are elements of a command assigned the primary mission of protecting the main body. On the march, security detachments are called advance guards, rear guards, flank guards, and march outposts; in camp, in bivouac, or in a defensive position, they are called outposts; in combat, combat patrols. The general conduct for security detachments of mechanized cavalry is the same as that obtaining with horse cavalry.

b. Security detachments have three functions—protecting the main body, insuring freedom of maneuver of the main body, and obtaining information.

(1) Protecting the main body from surprise, observation, and interference is accomplished by preventing the enemy's firing into the main body; by holding the enemy and gaining time for the main body to deploy before coming under effective fire; by

preventing the enemy from observing the size, dispositions, and composition of the main body.

(2) Freedom of maneuver of the main body is insured by security detachments which, according to circumstances, attack, resist, or delay.

(3) Information of the enemy's forces, of the terrain, and road net is obtained by reconnaissance.

c. All security detachments have similar functions involving duties ranging from reconnaissance to determined action. Therefore, in general, the formation of all security detachments is similar. The formation from front to rear usually consists of, first, patrols covering the front; second, a group or line of groups in observation; third, a support or line of supports; and, fourth, in the case of larger detachments, a reserve.

d. The strength of a security detachment depends upon the mission assigned it and is governed largely by the size and composition of the command, the terrain, the enemy, training, and physical condition of the troops.

34. Advance by bounds.—*a.* An advance by bounds is accomplished by a forward element gaining distance over the one in rear to reach some important point which possesses tactical advantage either for observation or combat. The smaller the element and the more easily its gaits or speed can be changed, the shorter and more frequent are its bounds.

b. A bound of a forward element should not be so great as to place it beyond supporting distance of the next succeeding element.

c. A bound of a rear element should be under the protection of the element next in front.

d. An advance by bounds has several important advantages:

(1) It enables an element to reconnoiter the terrain before the following element has closed up.

(2) It permits the crossing of terrain that may be under hostile observation or fire in the shortest time.

(3) It offers opportunities for resting horses by dismounting, for watering them, for the interrogation of inhabitants, and for servicing of vehicles.

(4) It offers opportunities to coordinate the advance.

35. Movement by a steady advance.—When darkness, fog, or rapid rate of march of the main body makes the movement

by bounds impracticable or inadvisable, movement of the advance guard is steady and at a prescribed rate.

SECTION II

ADVANCE GUARDS

HORSE CAVALRY

36. Definition.—An advance guard is a security detachment which precedes the main body on the march.

37. Function and duties.—The function of an advance guard is to insure the uninterrupted advance of the main body and to protect it against surprise and observation by hostile ground forces. Specifically its duties are to—

a. Guard against surprise and to obtain information by reconnoitering to the front and flanks.

b. Push back small parties of the enemy and to prevent their observing, firing upon, or delaying the main body.

c. Check the enemy's advance in force long enough to permit the main body to prepare for action.

d. Determine the strength and location of the hostile lines and flanks when the enemy is encountered on the defensive but to avoid bringing on a general engagement unless empowered to do so.

e. Remove obstacles, repair roads, and facilitate in every practicable way the uninterrupted march of the column.

f. Seize or hold such terrain features as will facilitate the successful execution of the commander's plan for his command as a whole.

38. Strength and composition.—The strength of a cavalry advance guard varies from a very small fraction to about one-third of the command. The following may be taken as a guide, bearing in mind that the tactical situation and size of the command determine the proper strength of the advance guard:

a. For a platoon, four men.

b. For a troop, one squad.

c. For a squadron, one rifle platoon, with a light machine-gun squad and sometimes a caliber .50 machine gun, attached.

d. For a regiment, one rifle troop, with sometimes a section of heavy machine guns, a section of caliber .50 machine guns, and a section of scout cars, attached.

e. For a brigade, one squadron, with a platoon of heavy machine guns and sometimes a platoon of caliber .50 machine guns and one or two sections of scout cars, attached; exceptionally, if the situation requires it, one battery of horse artillery attached.

f. For a division, one regiment and, if the situation requires it, a battery of field artillery.

39. Formation.—*a.* A large advance guard is divided into a reserve and a support. In an advance guard consisting of less than a squadron, the reserve is generally omitted. The support is divided into a support and an advance party. The advance party sends forward a portion of its strength, usually about one squad, called the point. An advance guard for a troop, or less, may consist of a point only. An advance guard for a squadron may consist of an advance party only. A point is always present. If any portions of an advance guard are unnecessary, the rear elements are the first to be omitted.

b. Prior to reaching the area in which enemy contact is probable, advance guards may use the normal formation in depth. On entering the area of probable contact, the advance guard is partly deployed on a broad front to cover the entire width of the zone of advance. This may necessitate increasing the number of points, number of advance parties, number of supports, or all three.

40. Distances between elements.—*a.* Distances between the advance guard and the main body and between parts of the advance guard vary according to conditions. The following distances are given as the minimum deemed necessary to provide reasonable safety from surprise fire. During the march these distances may frequently be doubled.

Point to advance party-----	300 yards.
Advance party to support-----	600 yards.
Support to reserve-----	1,000 yards.
Reserve to main body-----	1 mile.

If there is no reserve, the distance should be about 1,000 yards from the support to the main body. If there is no sup-

port, the distance should be about 600 yards from the advance party to the main body.

b. The width of front the advance guard should cover will depend upon the road net, the terrain, and the situation. As a general guide the following may be used :

A squad will cover 600 yards front.

A platoon will cover 1,200 yards front.

A troop will cover 1 mile front.

A squadron will cover $1\frac{1}{2}$ miles front.

A regiment will cover about 2 miles front.

c. In a dismounted advance guard, the distances are less than when mounted. When operating in darkness, thick weather, or in close country, advance guards maintain less distance than when operating in daylight, clear weather, or in open country.

41. Regulation of rate of march.—The march order designates the body which is to regulate the rate of march and the distance between the advance guard and the main body. The main body regulates the rate of march whenever the command must maintain a certain rate of march to reach a designated place at a prescribed time. When the movement of the main body is dependent upon information which the advance guard obtains or upon the actions of the latter, the advance guard regulates the rate of march. At night it is usual for the advance guard to regulate the rate of march.

42. Conduct.—The duties of the various elements of an advance guard differ. In general, the function of each rearward element is to cooperate in the fulfillment of the task undertaken by the element next in front.

a. The point acts as a patrol except that it is limited to a definite line of march and has close support in its rear. Its principal functions are to—

(1) Reconnoiter the road on which the column is marching and on either side thereof to a maximum distance of about 300 yards.

(2) Push forward boldly, driving back or dispersing promptly small hostile patrols. When the enemy encountered is too strong to be defeated, the point informs the next element in rear and vigorously reconnoiters within its capabilities the enemy strength and dispositions.

(3) Push boldly into villages along the line of march and to determine promptly whether or not they are occupied by the enemy.

(4) Gain rapidly elevations, edges of woods, and similar points of vantage from which a good view to the front can be obtained or which the enemy might try to occupy.

(5) Give timely warning of signs of the presence of the enemy to the element next in rear.

(6) Remain on or near the route of advance in order to protect the head of the column from surprise and in order to act as a pivot for the operations of the element of the advance guard in rear.

b. The principal functions of the advance party are to—

(1) Maintain connection with the point and to assist it in overcoming resistance encountered on the line of march.

(2) Extend the flank reconnaissance to effective rifle range.

(3) Check the enemy's advance until the element next in rear shall have had time to prepare for action. In case the enemy encountered is too strong for the advance party to defeat, the latter reports the fact to the element next in rear and reconnoiters the enemy's strength and dispositions.

c. The support bears the same relation to the elements in its front and rear as the advance party does to the point and the support. It is essentially the reconnoitering portion of the advance guard. Its principal functions are to—

(1) Maintain connection with the advance party and to assist it in overcoming the enemy's resistance.

(2) Extend the flank reconnaissance to a distance of about 1 mile.

(3) Check a hostile advance until the body next in rear has time to prepare for action. In case the enemy encountered is too strong to be defeated, the support reports the fact to the element next in rear and reconnoiters the enemy's strength and dispositions.

d. The reserve is essentially the maneuvering element of the advance guard. Its function is to furnish the principal combat strength of the advance guard.

43. Action upon meeting the enemy.—The combat action of the advance guard is regulated with reference to the requirements of the main body.

a. When the enemy is not in force, the advance guard brushes him aside by prompt and vigorous action.

b. If the enemy is encountered in force, the action of the advance guard is so conducted as to assist the plan of the commander for the employment of the main body. The advance guard commander and the commanders of his subordinate elements must be alert and prepared to act promptly and aggressively without waiting for instructions from the next higher commander.

44. Employment of reconnaissance vehicles and aviation with the advance guard.—Regimental reconnaissance vehicles may be attached to advance guards. Divisional reconnaissance vehicles and aviation employed in front of an advance guard should be required to keep the advance guard commander informed of the results of their reconnaissance. The early information of enemy activities furnished by aviation and reconnaissance vehicles permits the advance guard to conserve its strength and direct its efforts to the best advantage.

a. Divisional reconnaissance vehicles.—Divisional reconnaissance vehicles are seldom attached to advance guards. Usually they are employed directly from the main body but in close cooperation with the aviation to its front and the advance guard to its rear.

b. Regimental reconnaissance vehicles.—(1) Under present Tables of Organization, a regiment of cavalry has a platoon of scout cars divided into sections. A method of employment of these cars on the march may be—

(a) One section with the advance guard.

(b) One section on an independent reconnaissance mission.

(c) One section in reserve with the main body.

(2) The section attached to the advance guard should be used for front and flank reconnaissance up to one or two hours' march in advance of the main body and for communication between the elements of the advance guard and from the advance guard to the main body. When the enemy is encountered, scout cars promptly communicate by the most rapid means available with the regiment and the advance guard commander. Depending upon the situation, they may seek to delay the enemy by harassing action. As the advance guard engages the enemy,

scout cars operate from the flanks and initiate intensive reconnaissance to locate the hostile flanks and reserves.

c. Aviation.—Aviation, while never attached to advance guards, renders valuable assistance by reporting direct to the advance guard the approach of enemy forces, the location and organization of hostile positions along the axis of advance, pertinent information of roads and bridges, and other information of a similar nature.

45. Machine guns and 37-mm guns.—*a. (1) Light machine guns.*—Light machine guns being troop weapons are organically a part of all advance guards, or elements thereof, the size of a rifle troop or larger. Whenever a rifle platoon is assigned as an advance guard or an element thereof, a light machine gun should be attached to it. The light machine guns in an advance guard or element thereof should be placed so that they may be brought into action early. If the advance guard attacks or is itself attacked, the light machine guns are used according to the principles of their use in attack and defense.

(2) Heavy machine guns.—Heavy machine guns may be attached to advance guards in about the same ratio that the size of the advance guard itself bears to that of the whole command. A rifle troop may have a section of two heavy machine guns attached; a squadron, a platoon of four heavy machine guns. A section of heavy machine guns should never be divided between two elements of an advance guard. The guns should march at the tail of the rifle unit or, in case early use of the heavy guns is contemplated, ahead of the last rifle unit. The distribution will also vary with the nature of the terrain, guns being well forward in rolling country but farther back in very open, flat, or densely wooded country. If a general attack or defense develops, the heavy machine guns are used according to the principles of their use in attack or defense.

(3) Caliber .50 machine guns.—If enemy armored vehicles are expected to be met on the march, it is important to have caliber .50 machine guns with an advance guard the size of a platoon or larger. Individual guns should be distributed in depth so that an enemy vehicle approaching on the road on which the advance guard is moving must run through the fire of several guns. A reasonable disposition of the guns, when four guns are present in a squadron, is to have a gun at the head and

tail of the support and of the reserve. If only one gun is present, it should be at the tail of the rear element. If armored vehicles approach on the road, all elements clear the road to the same side and the caliber .50 guns go into action covering the road with fire away from our own rifle units. Distribution in depth also allows rapid opening of fire by all caliber .50 guns against an armored vehicle attack from either flank.

(4) *37-mm guns.*—37-mm guns should be assigned to advance guards in about the same ratio that they are present in the regiment.

b. The machine-gun commander should accompany the advance guard commander on the march and commanders of machine-gun units attached to elements of the advance guard should accompany the commanders of such elements.

46. *Artillery.*—Artillery may be attached to the advance guards of a squadron or larger. If no artillery is attached to the advance guard, the necessary artillery support for its action is furnished by the artillery with the main body.

47. *Engineers.*—Engineers attached to an advance guard march with the support of a large advance guard or with the reserve of a small advance guard. Their principal function is to repair roads and bridges and remove obstacles.

48. *Trains.*—The combat trains of an advance guard generally remain with the trains of the main body.

49. *Connection and communication.*—*a.* Connection between the elements of an advance guard and between the advance guard and main body is maintained by connecting groups.

b. Communication between the elements of the advance guard and between the advance guard and the main body is maintained by the quickest means available. Scout cars, motorcycles, and mounted messengers are usually employed for this service.

c. Simple and well understood signals are used to indicate enemy in sight and changes in gait.

d. Leaders at the front send back information promptly and in the form of written messages when practicable.

50. *Cavalry as part of a mixed advance guard.*—When cavalry is part of a mixed advance guard, its principal function is reconnaissance.

51. *Advance guard commander and other leaders.*—*a.* Upon receipt of a march order, the advance guard commander issues

the necessary orders for the disposition and movement of the advance guard.

b. The advance guard commander goes wherever he deems his presence necessary, though his commander's group is habitually at the head of the largest element of the advance guard.

c. *Rapid personal reconnaissance and prompt decisions by commanders of all elements are essential.*

MECHANIZED CAVALRY

52. Assistance from reconnaissance troop.—Normally the distant reconnaissance performed by the reconnaissance troop can be relied upon to route the advance guard over the best available roads and around the greatest obstacles. This prior reconnaissance usually provides flank reconnaissance beyond the range of that of the advance guard.

53. Assignment of duties.—The duties of the advance guard in mechanized cavalry are normally assigned to a combat-car element with machine-gun elements attached.

54. Motorcycles.—Motorcycles are of value to the advance guard as connecting files, for performing rapid reconnaissance, and for furnishing timely information of hostile armored vehicles, machine guns, and aviation. They may be employed in advance of the point and also as patrols to the flanks when the road net permits.

55. Formation.—A combat car troop acting as advance guard is divided into a support and an advance party. The advance party, ordinarily consisting of a platoon of combat cars with motorcycles attached, sends forward one car as a point. The point is sometimes preceded by at least one or two motorcycles. The troop and any attached machine-gun elements, less the advance party, constitute the support.

56. Distances.—a. Subject to the limitations imposed by the situation, roads, and accidents of terrain, the advance guard of a regiment precedes the main body by about 10 minutes.

b. Within the advance guard, the advance party precedes the support by 2 to 4 minutes.

c. The support of the advance guard regulates its rate of march so as to maintain a position approximately 10 minutes in advance of the main body.

57. To regulate the rate of march.—The march order indicates the unit which is to regulate the rate of march and the time distance to be maintained between the advance guard and the main body. Normally the main body regulates the rate of march. Usually this is about 25 miles per hour.

58. Duties of advance guard elements.—Normally, upon encountering hostile forces, the combat cars deploy and attack, closely supported by the machine-gun elements.

a. Point.—The point is limited to a definite line of march. It pushes forward boldly, closely supported by the advance party.

b. Advance party.—The advance party provides reconnaissance to the flanks along roads or trails to a distance of 1 mile.

c. Support.—The support extends reconnaissance to the flanks to a distance of about 2 miles over roads and trails.

d. Patrols.—The various elements of the advance guard employ patrols as required by the situation. These are supplemented, when necessary, by patrols from the main body. Patrols with mechanized cavalry normally consist of one or more motorcycles or motorcycles with sidecars. Under extreme necessity, two or more combat cars in mutual support of each other may be used as a patrol.

59. Connection and communication.—*a.* Within the advance guard, connection between the elements is maintained by motorcycle riders from the elements next in rear.

b. Connection between the main body and the advance guard is best maintained by motorcycle riders dropped out of the support to clock the interval of the head of the main body and reporting to the advance guard commander the actual marching-time distance between the advance guard and the head of the main body.

c. Communication between the elements of the advance guard and between the advance guard and the main body is maintained by the quickest means available.

d. Leaders at the front promptly send back information. Promptness is vital because of the mobility of all units.

e. Simple and well-understood signals are used to indicate enemy in sight, a change of rate of march, etc. In combat, flags which by color alone indicate certain information or orders are useful additions to the radio.

SECTION III

COVERING DETACHMENTS

60. Definition.—A covering detachment is a security detachment used to protect the movement of troops in the presence of the enemy. Normally it is a unit, such as a squad, a platoon, or a troop, acting under command of its own leader.

61. Purpose.—*a.* A covering detachment has some of the general functions of an advance guard. It precedes the unit from which it is drawn for the primary purpose of security and a secondary purpose of reconnaissance. The main purpose is to provide a group (or groups) to prevent surprise by fire, act as ground scouts, cut fences, and lead or guide the larger force so that it may advance under cover or by the best available ground.

b. A covering detachment is used when early contact with the enemy is expected and when, because of this expectation, the main body is deployed in an approach formation. The most apparent need for a covering detachment is during the approach to a line of departure from which an attack is to be launched.

c. Covering detachments are used for the same purpose and in a similar manner for both horse and mechanized cavalry.

62. Formation.—There is no fixed formation, but covering detachments are generally deployed widely in a lateral direction and in very little depth.

63. Operation.—*a.* Covering detachments always move by bounds which are ordered by the force commander. The leader of the covering detachment conducts his detachments to the place indicated and halts there, observing to the front and flanks, until ordered to make another bound to another indicated place.

b. A covering detachment should offer some resistance while retreating before a sudden onslaught of the enemy. It may attack hostile patrols when necessary.

64. Reconnaissance vehicles.—*a.* Divisional reconnaissance vehicles are seldom attached to covering detachments.

b. Regimental reconnaissance vehicles (scout cars) are frequently attached and conduct reconnaissance to discover hostile dispositions and movements that could interfere with the advance of the detachment.

SECTION IV

REAR GUARDS

HORSE CAVALRY

65. Definition.—A rear guard is a security detachment which follows and covers the main body on the march.

66. Suitability for rear-guard duty.—Cavalry is especially suitable to perform rear-guard duty because its mobility enables it to reconnoiter well to the flanks, to operate over a wide front, to vary its action, and to withdraw quickly after having delayed the pursuing enemy to the last possible moment.

67. Function and duties.—*a.* The principal function of a rear guard is to assure an uninterrupted retirement of the main body and its protection from attack, observation, or interference by hostile ground groups.

b. Specifically, the duties of a rear guard are to—

(1) Guard against surprise and to furnish information by observing to the rear and reconnoitering to the flanks.

(2) Hold back small forces of the enemy and prevent their observing, firing upon, or delaying the main body.

(3) Check pursuit by an enemy in force until the main body has time to reorganize, prepare for action, march beyond the range of hostile fire, or occupy a position.

(4) Provide suitable passive measures of opposition, such as interposing obstacles and destroying or damaging bridges and roads.

(5) Collect stragglers and lost animals and to destroy abandoned property.

68. Strength and composition.—The strength and composition of a rear guard should be such as to enable it to accomplish its mission without the intervention of the main body.

a. Strength.—The strength of a rear guard varies from a small fraction to about one-third of the whole command, depending upon the mission, direction of march, and mobility of the main force; upon the nature of the terrain; and upon the enemy situation.

b. Attached troops.—(1) *Machine guns and 37-mm guns.*—

(a) The assignment and distribution of machine guns and 37-mm guns in a rear guard are similar to those in an advance

guard. If the flanks of the main body are secure, machine guns may be in greater proportion and distributed closer to the enemy than in an advance guard.

(b) Light machine guns are normally assigned to any element of a rear guard the size of a platoon or larger.

(c) Heavy machine guns may be assigned to any element of a rear guard the size of a troop or larger. The heavy machine guns are dispersed at a greater distance from the enemy than the light machine guns. In case the rear guard fights a delaying action, the guns are employed as explained elsewhere in this manual for such action.

(d) The number of caliber .50 guns assigned to a rear guard depends on the seriousness of the threat from mechanization. They are distributed in depth, single guns frequently being assigned to different elements.

(e) The 37-mm gun is useful in rear guards against hostile mechanization.

(2) *Reconnaissance vehicles.*—(a) Divisional reconnaissance vehicles are seldom attached to rear guards.

(b) Regimental reconnaissance vehicles are frequently attached to rear guards. When attached, the cars are of great assistance in maintaining contact with and delaying the enemy and in performing reconnaissance of the hostile flanks and rear to obtain early information of encircling maneuvers. They can also be utilized to furnish a rapid and efficient means of communication, to cover withdrawals of heavily engaged units, to facilitate last-minute withdrawals of detachments preparing obstacles and demolitions, and to render obstacles more effective by increasing the length of time they can be protected by fire power.

(3) *Artillery.*—Normally, artillery is not attached to rear guards smaller than a squadron. When attached, it is a valuable addition. Because of its great range, artillery can force the enemy off the roads before he is within range of small arms and can compel him to march across country in deployed formation or to use circuitous routes in order to obtain cover. Because of its mobility, it is able to repeat this operation frequently and thus materially reduce the enemy's rate of advance.

(4) *Observation planes.*—One or more observation planes, though normally not attached to the rear guard, operate in

close liaison with its commander. They keep him informed of the strength, composition, location, and movements of the enemy forces. They assist, when necessary, in maintaining liaison between the main body and the rear guard. Exceptionally, they assist by attacking enemy columns.

(5) *Engineers*.—When available, engineers should be attached to the rear guard to complete demolitions which may have been prepared by preceding troops or to prepare obstacles.

(6) *Medical troops*.—Sufficient medical troops are attached to care for probable casualties.

(7) *Trains*.—The combat trains may march with those of the main body or remain with the rear guard. In the latter case, they should follow closely the tail of the main body.

69. *Formation*.—When not in close contact with the enemy, the rear-guard formation resembles that of an advance guard reversed. Next behind the main body marches the reserve, followed in turn by the support, rear party, and rear point. In case the size of the rear guard makes it impracticable to have all these elements, they are dispensed with in order, beginning with the reserve.

70. *Distances*.—On the march, distances between the rear guard and the main body and between subdivisions of the rear guard vary. In general, distances are governed by the size and mission of the rear guard, by the strength, composition, mobility, and proximity of the enemy, and by visibility and terrain.

a. Support to reserve.—The minimum distance between the support and reserve is determined by the consideration that the support must delay the enemy until the reserve can prepare for action. The maximum distance is that which the reserve can take without exposing the support to the liability of being cut off. These distances may be greater in open country or during daylight than under the opposite conditions.

b. Reserve to main body.—The minimum distance between the reserve and the main body is determined by the consideration that the rear guard must protect, and not be driven back upon, the main body. The maximum distance is that which can separate the reserve and main body without subjecting the rear guard to the danger of being cut off by the enemy.

71. *Conduct of march*.—The elements of the rear guard usually retire by bounds, but may move at a steady rate of

march whenever fog, darkness, a rapid march of the main body, or other conditions render movement by bounds impractical or useless.

72. Connection and communication.—Connection and communication are maintained in rear guards in the same general manner as has previously been outlined for advance guards.

73. Duties of rear guard elements.—In general, each rear guard element maintains connection with the next lower element and, by fire action or otherwise, assists the latter in effecting withdrawal; each element reconnoiters or observes to its own rear and flanks and furnishes timely information of the enemy situation to the next higher commander; each element covers the retirement and cooperates in the fulfillment of the mission of its next higher element; and each element in falling back avoids the fire of the elements covering its withdrawal without disclosing their location or otherwise hampering their action.

a. Rear point.—The rear point is a patrol from the rear party which follows the latter en route. It adheres closely to the route of retirement, observing constantly to the flanks and rear to detect hostile moves. It discourages pursuit by firing upon hostile patrols or by mounted action against them when favorable opportunities occur.

b. Rear party.—The rear party, a subdivision of the support, follows the latter. It endeavors to delay a closely pursuing enemy by long-range fire; it performs reconnaissance to the flanks to a distance of about 300 yards; it covers the withdrawal of the rear point by engaging the enemy either by means of dismounted fire action or by short mounted attacks. When necessary it maneuvers at distances up to about 300 yards on either side of the route of retirement.

c. Support.—The support, in addition to being the main reconnaissance element of the rear guard, is the smallest element capable of offering the enemy serious resistance. It follows the reserve en route or the main body when no reserve is present. In the latter case it also performs the duties that normally devolve upon the reserve. It delays the enemy, usually by means of long-range fire of small detachments in successive positions; it covers the occupation of delaying positions by the reserve; it reconnoiters to the flanks; it covers the withdrawal

of the rear party by defensive fire action augmented, when occasion demands, by attacks either mounted or dismounted.

d. Reserve.—The reserve, normally the strongest element of the rear guard, constitutes its chief delaying force. It performs more distant flank reconnaissance. It is a duty of the reserve in particular to detect the presence of any hostile forces attempting an encircling maneuver. It delays the enemy by means of all available fire power and, when occasion demands, by offensive action in cooperation with the support. In case the situation requires the rear guard to effect a long delay of the enemy force, the reserve, under protection of the support, prepares and occupies strong delaying positions.

e. Patrols.—The principles relating to the employment, strength, duties, and operations of patrols from an advance guard apply to patrols from a rear guard, except that a patrol from the rear guard moves rapidly to the points to be reconnoitered and then returns to the axis of movement in time to reach it before the rear point has passed by.

74. Combat action.—*a.* The combat methods of a rear guard should be varied frequently so as to make full use of surprise.

b. In principle, the main efforts of a rear guard, like those of any delaying force, must be constantly directed toward barring roads or other avenues of approach, and denying, or at least disputing to the limit of available means, their use by the enemy forces.

c. When a rear guard is overtaken on the march each element covers the withdrawal of the element nearer the enemy by dismounted fire action, by mounted action, or by a combination of the two, as the situation may require.

d. (1) When the situation requires long delays, the rear guard fights in one position or in successive positions. The firing line on each position is made strong, local supports and reserves being reduced to a minimum.

(2) The rear guard commander makes timely provision for preliminary reconnaissance of new positions and routes thereto.

e. When the pursuing force consists entirely of infantry or is very weak in cavalry, the rear guard operates boldly against the hostile flanks whenever it can do so without uncovering the main body. The forces employed for attack against the hostile flanks should have sufficient strength to present the

appearance of a strong attack; otherwise the enemy, by interposing a small covering detachment, may continue his pursuit without serious interruption.

f. When the pursuing force consists entirely of cavalry, it is usually necessary for the rear guard to remain concentrated, employing the necessary reconnoitering detachments and patrols. Opposing cavalry usually attempts to attack from the flank. Such attacks may be opposed by employing surprise fire combined with mounted counterattack.

g. At times the enemy may be seriously delayed by mounted attack against the heads of the pursuing columns.

h. When a rear guard is fighting dismounted, the led horses are kept mobile and close at hand.

i. A rear guard resorts to such negative defensive measures for halting or delaying the enemy as obstructing fords, felling trees across the road, and burning stretches of grass or shrubs. It destroys important bridges only upon authority from higher headquarters.

75. Cavalry with infantry rear guards.—*a.* A cavalry force is sometimes attached to an infantry rear guard. Cavalry thus employed is termed rear guard cavalry. It operates under orders of the rear guard commander.

b. Because of its combined mobility and fighting power, cavalry is especially adapted to the conduct of delaying actions. The importance of attaching some cavalry to an infantry rear guard is evident when the main body has gained sufficient distance from the enemy. In fact, under such conditions cavalry may well constitute the bulk of the rear guard, its conduct in this case conforming to that of a cavalry rear guard.

c. When rear guard cavalry is of insufficient strength for offensive action it may be used to maintain contact with the enemy and to extend reconnaissance to the flanks. When sufficient in strength, it may be released for offensive action against the hostile flanks.

d. When the pursuing enemy is distant, the rear guard maintains contact by means of its cavalry, which keeps the rear guard informed of the progress and direction of the hostile pursuit.

e. When the enemy is pursuing closely, cavalry, reinforced by field artillery, usually covers roads parallel to the line of retreat.

f. When the infantry is divided into two echelons and resorts to delaying action in successive positions, the rear guard cavalry, because of its mobility, is able to assist as a unit in the defense of each position. The cavalry, which is the last to withdraw from the various delaying positions, checks the hostile pursuit between positions so as to cover the retirement of the infantry and artillery.

MECHANIZED CAVALRY

76. Suitability for rear-guard duty.—Mechanized cavalry is especially suitable to perform rear-guard duty because of its heavy fire power and its mobility, which enables it to withdraw quickly after delaying the pursuing enemy to the last possible moment.

77. Strength and composition.—*a.* The rear guard of mechanized cavalry normally consists of machine-gun elements, augmented by combat cars to provide greater combat power.

b. The trains of the rear guard should march at the tail of the main body. The troop maintenance elements of troops performing rear-guard duty march with the rear guard.

78. Connection and communication.—Connection and communication are maintained in a rear guard in the same general manner as has been outlined for the advance guard. (See sec. II.)

79. Combat action.—*a.* When a mechanized cavalry rear guard is overtaken on the march by a mechanized enemy or by an enemy with combat cars attached, it may delay by fire or mounted attack, or by fire and mounted attack combined.

b. When the pursuing force consists of mechanized cavalry, care is taken to prevent dispersion of the rear guard in order that it may be able to repel attacks from the flank and avoid being cut off from the main body.

c. At each halt, a march outpost is established by the rear guard to cover the route of withdrawal and the flanks.

SECTION V

FLANK GUARDS

HORSE CAVALRY

80. Definition.—A flank guard is a security detachment detailed to protect the flank of a marching force. The nature of this duty is such that it is usually best performed by troops possessing a high degree of mobility.

81. Flank guard of a cavalry command.—A cavalry command employs a flank guard when the security afforded by the advance or rear guard or both is insufficient to protect a flank.

a. Strength.—A flank guard varies in strength from a patrol to a force of all arms. No more troops are employed on flank-guard duty than are required by the situation.

b. Attached troops.—(1) *Machine guns and 37-mm guns.*—The number of machine guns and 37-mm guns attached to a flank guard varies considerably, depending on the amount of combat to be expected of the flank guard. In general, the caliber .30 machine guns should be in about the same ratio that the size of the flank guard bears to that of the whole command. A rifle troop on flank-guard duty has its organic light machine guns; it may have a section of heavy machine guns. As the flank guard is more likely to receive attacks from the flank than on its head or tail, the machine guns, both light and heavy, should normally be distributed along the column, with the light guns nearer the head and tail than the heavy guns. Caliber .50 machine guns may be attached to a flank guard if danger from mechanization exists.

(2) *Artillery.*—Artillery is usually attached to flank guards required to operate beyond effective supporting distance of the artillery in the main column or to combat hostile forces likely to be accompanied by mechanized elements.

(3) *Reconnaissance vehicles.*—(a) Divisional reconnaissance vehicles are seldom attached to flank guards.

(b) Scout cars are usually attached to flank guards and are used to conduct reconnaissance to locate hostile threats; to furnish a rapid and efficient means of communication; to furnish a highly mobile element, either for seizing and holding critical points prior to their occupation by the flank guard

proper or for delaying the enemy from localities too distant for the flank guard to occupy; and to cover withdrawals of closely engaged elements.

(4) *Observation planes*.—Although as a rule airplanes are not actually attached to flank guards, they cooperate with them in the same manner as with advance guards and rear guards.

(5) *Other auxiliary troops*.—Other auxiliary troops, such as engineer, chemical warfare, and medical units, are attached in accordance with their need as the situation in each instance may demand.

(6) *Trains*.—Combat trains of the flank guard usually accompany it but they may march with the trains of the main body.

82. *Conduct of a flank guard*.—*a*. Since the mission of a flank guard is to protect the flank of a marching column, it should interpose itself between the main body and located or anticipated hostile threats. To do this requires—

(1) Reconnaissance to the exposed flank.

(2) Mobility in the flank-guard troops.

(3) Close liaison with the main body.

b. A flank guard usually proceeds by bounds from one key position to another. Upon arrival, dispositions are made to hold that position as long as may be necessary to let the main body march out of danger. The flank guard then moves to the next key position. Key positions are those places where it is most probable that the enemy will pass in any move he might make against the main body and which might be employed usefully by the flank guard in performing its mission.

c. When the enemy is encountered the flank guard may act offensively, delay in successive positions, or defend a position as the situation may require.

MECHANIZED CAVALRY

83. *Suitability for flank-guard duty*.—Flank-guard duty can best be performed by units possessing a high degree of mobility. Therefore mechanized cavalry is particularly well suited for the execution of this mission.

84. *Methods of employment*.—*a*. Armored cars maintain contact with threatening forces and conduct energetic reconnaissance.

b. In addition to the normal methods of performing flank-guard duties where considerable doubt exists as to the most likely avenue of hostile approach, a mechanized flank guard may resort to a position of readiness at some conveniently located point. If sufficiently strong, it may occupy two or more key positions covering the most probable routes of approach. In the latter case a highly mobile reserve held at a conveniently located point moves quickly to oppose the enemy when his intentions and line of approach are disclosed.

85. **Contact with main body.**—Under conditions approaching normal, the communication facilities afforded by the use of radio, aviation, and motorcycle messengers enable the mechanized flank-guard commander to maintain closer contact with the main body.

SECTION VI

OUTPOSTS

HORSE CAVALRY

86. **Definition.**—An outpost is a security detachment detailed from a command to furnish protection while the bulk of the command rests.

87. **Troops for outpost duty.**—In a forward movement, the advance guard ordinarily furnishes the troops for outpost duty. In a retrograde movement the outpost is usually formed from troops other than the rear guard.

88. **Security measures.**—a. The introduction and development of mechanization has necessitated all-around security. Aviation has compelled dispersion of large units to seek overhead cover.

b. At a distance from the enemy security may be obtained by sending out security detachments (troops or platoons) to hold critical points on the routes of approach from the front, flanks, and rear.

c. When in probable contact with the enemy security measures approach a more continuous outpost organization. Outpost sectors are assigned to the various detachments. When necessary, portions of the main body are held in readiness for immediate action.

d. Security is maintained primarily by reconnaissance and observation and by the central location of local supports. The commander of the whole force takes over the coordination of the combined outpost and assigns sectors of responsibility to subordinate commanders.

e. In commands the size of a regiment or larger the commander designates the outpost line of resistance.

89. Classification.—Outposts are classified as march outposts, combat outposts, and outposts for the night (or day).

a. March outposts.—A march outpost is established at each halt of a command, including the formal halt for the night. In the latter case it furnishes temporary security while the outpost for the night is being established.

b. Combat outposts.—In a defensive situation, when the enemy is in close contact, each squadron covers its sector by means of a security detachment termed a combat outpost. The action of the several combat outposts is coordinated by the commander of the whole force. Similarly, in offensive situations, when the battle is interrupted by nightfall and troops are required to bivouac in battle formation, combat outposts are established by the leading troops and squadrons.

c. Outposts for the night.—Outpost for the night, or simply outpost, is the term applied to the security detachment established by a command to protect it from hostile interference during any protracted halt.

90. Functions.—The functions of an outpost are to furnish the command with information relative to the enemy; to protect the main body against surprise attack and observation by hostile ground forces; to give timely warning of the approach of hostile airplanes; to offer resistance to attacks by hostile airplanes; to gain the time required by the main body to make the necessary dispositions.

91. Strength and composition.—*a.* The strength and composition as well as the disposition and conduct of an outpost depend upon the following principal factors:

- (1) Special mission assigned the outpost.
- (2) Tactical dispositions of the main body.
- (3) Proximity, strength, and activity of the enemy.
- (4) Size and composition of the whole command.

(5) Front to be covered and the distance of the outpost line of resistance from the position of the main body.

(6) Nature of the terrain, especially the road net.

(7) Length of time opposing forces are expected to be in contact or the time the main body is to remain in place.

b. Strength.—An outpost is initially given sufficient strength to enable it to accomplish its mission, but is made no stronger than is consistent with reasonable security. It may vary from a small force up to one-fourth of the command.

c. Attached troops.—(1) *Light machine guns.*—Light machine guns are usually present with all security detachments the size of a rifle platoon or larger, and very often with smaller detachments.

(2) *Heavy machine guns.*—Heavy machine guns are ideal weapons for an outpost, but only the proportionate number of guns should be used. Heavy machine guns attached to an outpost may be attached to a particular support, or supports, if to do so will insure covering all avenues of approach which it is considered will require heavy machine-gun defense. If there are more such avenues of approach than there are pairs of guns (or single guns, if it is decided to post them singly), then some or all of the guns should be kept in the outpost reserve, positions with routes thereto reconnoitered, and the positions actually occupied only in case of an attack on the outpost.

(3) *Caliber .50 machine guns.*—Caliber .50 machine guns may be attached to the outpost if danger from mechanization exists.

(4) *37-mm guns.*—These guns are useful in an outpost action against enemy machine guns and mechanized vehicles.

(5) *Artillery.*—Usually such artillery support as is required is furnished by the artillery with the main body. Batteries are specially designated for this purpose in case such action is contemplated. Some batteries may be attached to a large outpost.

(6) *Reconnaissance vehicles.*—Divisional reconnaissance vehicles are seldom attached to an outpost. Regimental scout cars are frequently attached to an outpost.

(a) During daylight, scout cars may be employed to conduct reconnaissance well to the front and flanks of the outpost, functioning as reconnaissance patrols operating on a favorable road net, and observing in advance of the horse elements. Individual cars may maintain liaison laterally and from front to rear be-

tween elements of the outpost or detached posts as the need exists. Cars may be given missions of observation at critical points on the probable route or routes of hostile approach, thus operating as detached posts. Such daylight reconnaissance is usually accomplished by dismounted observation by members of the car crews, with the cars held nearby under cover, prepared to withdraw rapidly. Security for the cars is most important under these conditions. Communication with the outpost should be continuous.

(b) During darkness, unless an emergency calls for other action, scout cars are habitually withdrawn in rear of the outpost line of resistance. They may be held in readiness to move out by previously reconnoitered routes to critical points to support the outpost line of resistance. They may be located and guns sited to cover likely avenues of approach to the bivouac.

(c) At night, scout cars may be sent to maintain observation of important points, such as bridges, defiles, and important cross-roads. When on a mission of night observation, because of the small crews, provisions for local security during the night should be made by attaching dismounted personnel to the scout cars. Cars should be hidden and sentinels posted to avoid capture of the cars.

(d) Scout cars should be in position for observation by dawn. When they must move from the bivouac to the position point in darkness, the movement must be made with great caution because the cars are most vulnerable in darkness and the noise of the motors gives ample warning of their approach.

(e) Precautions must be taken to prevent firing on friendly scout cars returning through the outpost. Prearranged visual or sound signals should be used. Flashlight or horn signals, in simple code, or other satisfactory signals may be used to prevent such an occurrence.

(7) *Engineers.*—Engineers are attached to the outpost as required for the repair or destruction of bridges, roads, etc., and for assisting in organizing the defense.

(8) *Medical.*—Medical units are attached in accordance with the needs of the situation.

92. Position.—An outpost position should be selected because of its facilities for observation and its suitability for defense.

93. Line of resistance.—The outpost line of resistance is a line encircling the bivouac areas beyond which the enemy must be held until the main body can prepare for action. The distance from the bivouac areas to the outpost line of resistance is based upon the size of the outpost force and of the main body; the character, strength, proximity, and range of weapons, and attitude of the enemy; and upon the terrain, especially the road net. It should be located along prominent terrain features or clearly defined objects on the ground. Strength is concentrated at the most important points, the remainder being covered by small detachments, patrols, and fire.

94. Organization.—*a.* The organization of an outpost in depth is such as to place between the main body and the enemy a series of groups which the enemy must attack successively as he advances. The stronger groups are nearest the main body. Two lines are usually established—a line of observation consisting of small groups charged with observing and reporting any hostile advance, and a line of resistance (supports) consisting of larger groups posted on the best defensive ground.

b. The usual subdivisions of an outpost from rear to front are reserve, supports, outguards, and sentinels. In case of attack, the primary duty of each subdivision in front is to gain time for the element next in rear to prepare for action. If forced back, each forward element retires on the next rearward element.

(1) *Reserve.*—The reserve, which constitutes the main force of the outpost, is held at some central point from which it can support the troops in front. It renders support to the troops in front by reinforcement or by counterattack. In case the outpost is assigned a delaying mission it holds a rallying position upon which the more advanced elements may retire in the event of a hostile attack in force. Its strength varies from one-fourth to two-thirds of the outpost strength. The reserve is marched to its post by its commander, who then sends out such detachments as have been ordered and places the remainder at rest. He stations at least one sentinel at the post of the reserve. He establishes connection with the supports and nearby detached posts. Each unit of the reserve is informed of its place of formation in case of attack.

(2) *Supports.*—The supports, constituting a line of supporting and resisting elements, are usually located along the line

of resistance of the outpost so as to cover likely avenues of approach. They vary in strength from a platoon to a troop. The strength, armament, terrain, and width of the outpost sector control the distance between adjacent supports. Each support is organized as a strong point. It commands an adequate field of fire to the front and sweeps with its fire the intervals between adjacent supports. Each support is assigned a sector clearly defined by means of readily distinguishable terrain features. Sector boundaries are so arranged and so designated that responsibility for covering roads, sensitive points, and likely avenues of hostile approach is never divided. Supports have sufficient strength to turn back small forces of the enemy or to check strong ones. Supports are numbered consecutively from right to left in the outpost. Each support commander stations at least one sentinel at the post of the support, details outguards to cover the front of the support, and makes provision for patrolling.

(3) *Outguards.*—(a) Outguards comprise pickets, sentry squads, and cossack posts. A picket consists of two or more squads, ordinarily not exceeding a platoon. A sentry squad is a squad posted in observation which maintains a single or double sentinel. A cossack post consists of four men and maintains a single sentinel. Outguards are usually detailed from supports to occupy vantage points of observation in front of the outpost line of resistance. Outguards should not be located beyond supporting distance from the outpost line of resistance. By day they are, so far as practicable, located in positions commanding an unobstructed view of the front and of the intervening terrain. At night it is sometimes advisable to place outguards in positions different from those occupied during the day. Outguards are numbered consecutively from right to left in each support. The number and size of outguards to be employed will depend upon the strength of the support, terrain, and actions of the enemy. In every case the outguard commander must understand what he is to do in an emergency.

(b) Pickets are usually sent to a road junction or placed on routes of likely hostile approach. A picket protects itself by means of single sentinels, cossack posts, sentry squads, and patrols, the number of these depending on the situation at hand. These groups sent out from a picket are called sentinel

posts and are numbered from right to left. The distance from the picket and the mission of these groups are the same as those prescribed above for an outguard.

(4) *Sentinels*.—Sentinels are posted either singly or in pairs. On sentinel posts from the larger outguards it is customary to use one sentinel in the daytime and two at night. Sentinels are located in concealed positions which afford an unobstructed view. Sentinels are given the following information:

(a) Direction and probable route of approach of the enemy.

(b) Names of features of military importance, such as roads, villages, or streams.

(c) Location of the support or other units of which the outguard is an outpost element and the location of adjacent outguards.

(d) Number of their relief, outguard, and support.

(e) What friendly patrols are in advance of the line of observation.

(f) Special signals.

(g) Means of identification of friendly mechanization at night.

(h) Where prisoners are to be sent.

(i) Where messages are to be sent.

c. Detached posts are observation and combat groups detailed for the purpose of occupying points which possess special importance to the security of the command but which are too remote to be included in the normal outpost organization. Detached posts are given sufficient strength to maintain themselves and to furnish the necessary observation in their vicinity.

d. (1) Patrols are used for liaison between the elements of the outpost and for security and reconnaissance. Patrols sent out to a distance are usually sent from the reserve or the main body. The commander of the main body specifically orders whatever distant patrolling he desires.

(2) Within the outpost, patrols proceed along the line of observation, visit the outguards, exchange information with them, and observe intervening ground. Such patrols usually consist of but two or three dismounted men, since the movements of large or mounted patrols are apt to betray the location of the outpost. The use of visiting patrols is generally limited to the hours of darkness.

(3) A well-devised system of patrolling is important to insure the security of the outpost and the main body.

95. Conduct.—The conduct of an outpost depends primarily on the contemplated employment of the main body. The plan of action of the main body may require the outpost to hold the line of resistance at all costs; or the outpost may be required to delay in order to afford the main body time to prepare for action.

96. To establish the outpost.—The order for the halt for the night will designate the bivouac areas of subordinate units, the outpost line of resistance, and the positions to be held in case of attack; in commands the size of a regiment or larger, it will assign sectors of the outpost and prescribe the approximate strength of each sector outpost. Upon receipt of the halt order, the advance or rear-guard commander should immediately dispose of the various elements of the march outpost in order to furnish protection for the main body while it is going into bivouac and to cover the establishment of the outpost.

97. Communication.—Communication within the outpost and between the outpost and the main body is maintained by means of messengers. When the main body is the size of a brigade or larger the telephone supplements the use of messengers in maintaining communication. Visual signals, such as ground projector signals or improvised alarms, are utilized in accordance with a prearranged code to indicate the approach of hostile ground or air forces.

98. Obstacles.—Obstacles constructed from material found on the ground, such as fences, brush, trees, or other available material, are placed on roads in front of outguards. Such obstacles should be covered by fire.

99. Mounts.—The principle that cavalry should not be separated from its mounts applies in outpost situations, except that usually horses are not kept farther forward than the line of supports.

100. Cavalry as part of a mixed outpost.—*a.* Cavalry which is part of a mixed outpost generally operates directly under the orders of the outpost commander though at times it may be attached to a support or to some other group. Its important functions are—

(1) Reconnaissance.

(2) To establish detached posts at points too distant for infantry occupation.

(3) To observe important roads and trails on the flanks of the outpost.

(4) To maintain connection with the outposts of adjacent commands.

(5) To operate against forces of the enemy which have been repulsed by the outpost.

(6) To maintain contact with a distant enemy.

b. The cavalry, when not needed for the foregoing duties, is withdrawn to some point well in rear of the outpost line of resistance so that it may rest and care for its animals.

MECHANIZED CAVALRY

101. General characteristics.—*a.* Except when in close proximity to the enemy, mechanized cavalry provides its own security by wide reconnaissance in threatened directions and outpost detachments placed some distance from the main body.

b. Antiaircraft machine guns of all vehicles are kept in readiness for immediate use.

c. Roads over which an enemy approach may be expected are patrolled.

d. The outpost is supplemented by holding critical points as detached posts.

102. Organization by day.—*a.* The organization of an outpost of mechanized cavalry differs from an outpost of other units because of increased distances between the main body and the outpost and the divisions of the outpost. During the hours of daylight a mechanized cavalry outpost ordinarily has its line of resistance some distance from a command the size of a regiment. Similarly, the lines of observation during daylight hours are extended well to the front. With their mobility and fire power, mechanized troops can quickly support an outpost line of resistance posted at a distance from the bivouac of the command.

b. Combat vehicles, when detached for patrol duty, habitually operate in pairs or more. Motorcycle patrols normally consist of two motorcycles. Outguards are accompanied close at hand by vehicular equipment.

103. Organization at night.—*a.* The normal disposition of the outpost of mechanized cavalry troops during darkness is

similar to that of other arms in that there is a line of observation supplemented by detached posts. However, the line of resistance is established at night by the disposition of the combat cars in bivouac. It is not practical at night to build up a line of resistance in advance of the bivouac by attempting to maneuver heavier elements of the command forward to that line during hours of darkness. Therefore the location of the desired line of resistance during darkness dictates that the command bivouac at that desired location. This makes it necessary to dispose of all elements in bivouac to provide the maximum fire resistance.

b. In close proximity to the enemy, mechanized cavalry provides for its close-in protection by sighting the guns of the vehicles for all-around defense. Troops bivouac at their vehicles.

c. Terrain features are utilized to the maximum extent in providing protection.

SECTION VII

COUNTERRECONNAISSANCE

HORSE CAVALRY

104. Definition.—Counterreconnaissance (screening) by cavalry includes all the measures taken by that arm to prevent the ground reconnaissance forces of the enemy from gaining information of the dispositions, movements, and plans of the main forces to which the cavalry pertains.

105. Missions.—*a.* Counterreconnaissance missions may be to screen a concentration, a movement, or any operation where secrecy is of importance.

b. The mission is accomplished by engaging the enemy in such a manner as to prevent or limit his observation of a certain area or beyond a certain line.

c. Counterreconnaissance missions may be assigned whether the force to be screened is advancing, retiring, moving laterally, or is at the halt.

d. In executing a counterreconnaissance mission, the efforts of cavalry are usually directed toward the defeat or neutralization of the principal hostile ground reconnaissance force—the enemy cavalry.

e. To prevent hostile patrols from working through the counterreconnaissance screen requires a network of small patrols

over a wide front with larger units in rear conveniently located for promptly supporting these patrols. To prevent a hostile penetration in force, a reserve or possibly the main body of the counterreconnaissance force may be employed to drive back the enemy.

106. Methods of operation.—In performing counterreconnaissance missions cavalry units operate offensively, defensively, or by a combination of offensive and defensive action.

a. When the hostile cavalry is weak or when it exposes itself to attack, the screening cavalry engages it or threatens to engage it in combat. This action may result in the defeat of the hostile cavalry or in its withdrawal from the field. The task of cavalry on counterreconnaissance is simplified by the early defeat of the hostile cavalry.

b. When the hostile cavalry is superior in strength, the screening cavalry usually resorts to defensive tactics.

c. When the screen must cover a broad front, it may be necessary to resort to delaying action as a means of temporarily impeding the operations of hostile reconnaissance forces.

107. Zones and sectors.—*a.* When a commander assigns a counterreconnaissance mission to a body of cavalry, he may designate a zone or sector to be covered by the counterreconnaissance screen.

b. If the mission calls for screening the advance of a force, a zone of action is usually prescribed for the cavalry.

c. If the mission calls for the establishment of a stationary screen, the instructions usually designate the general line and sector to be screened.

108. Moving and stationary counterreconnaissance.—With reference to the nature of the screen established, counterreconnaissance is classified as moving and stationary.

a. Moving counterreconnaissance is applicable to situations in which the cavalry is screening a force on the march.

(1) In a forward movement, the counterreconnaissance screen established by patrols operating on a broad front advances from one coordinating line to another. Counterreconnaissance detachments follow their patrols and keep within supporting distance of them. The detachments advance by bounds from one suitable terrain feature to another. When contact with the

enemy is gained, the bounds become shorter and the halts more frequent according to the necessity for—

- (a) Defeating or driving off hostile detachments.
- (b) Maintaining the uniform advance of the screen.
- (c) Awaiting the arrival of needed supporting troops.

(2) In covering a retrograde movement, the screen either remains in place or retires by bounds as required by the situation.

(3) A counterreconnaissance screen may be used to cover the flank movement of a large body of troops.

b. Stationary counterreconnaissance is applicable when the cavalry is screening a concentration or is preventing the enemy from reconnoitering an area.

109. **Frontage and depth.**—a. The frontage covered by cavalry on counterreconnaissance depends upon size of the force, terrain, visibility factors, and strength and activity of the enemy.

b. A cavalry division is able to cover effectively a front which does not normally exceed 20 miles. Those parts of the front or area most vulnerable to hostile reconnaissance receive special attention in the disposal of the counterreconnaissance forces.

c. A counterreconnaissance force is disposed in sufficient depth to give the commander time to concentrate an adequate force to prevent a hostile penetration of the screen.

110. **Main body of the cavalry.**—a. The main body of the cavalry marches or remains in a central location behind the counterreconnaissance detachments.

b. When advancing, the main body of the cavalry usually moves by bounds from one suitable defensive terrain feature to another.

c. When the main body of the cavalry marches in more than one column, its advance is usually coordinated by the designation of specific lines to be reached by heads of columns at specified hours.

111. **Detachments.**—In order to counteract the activities of hostile reconnaissance detachments and patrols, the screening cavalry employs counterreconnaissance detachments.

a. The duties of counterreconnaissance detachments are primarily to prevent reconnaissance by the enemy's ground troops and to prevent the transmission of information to the enemy.

b. The strength of a counterreconnaissance detachment depends on its mission, number of patrols it must furnish, strength and activity of the hostile forces likely to be encountered, road net, terrain, and nature of the screen to be established.

(1) Troops or squadrons are usually detailed as counterreconnaissance detachments. Under exceptional circumstances a regiment may be detailed for this purpose.

(2) Artillery, machine guns, and reconnaissance vehicles are attached in accordance with the needs of the situation. As a rule, artillery will find its greatest usefulness with the main body.

(3) The commander of the main body of the cavalry usually employs sufficient reconnaissance vehicles in both moving and stationary counterreconnaissance to perform the necessary distant reconnaissance beyond the screen. Reconnaissance vehicles, when attached to counterreconnaissance detachments, will normally be used as follows:

(a) *Moving screen.*

1. To maintain liaison within that part of the screen established by the detachment as well as with adjacent detachments.
2. To reconnoiter locally to the front and flanks of the detachment.
3. To assist the detachment commander in coordinating the progress of his patrols.

(b) *Stationary screen.*

1. To maintain liaison within the sector and with adjacent sectors.
2. To reconnoiter to the front and flanks of the sector held by the detachment.
3. As part of the mobile reserve to resist sudden attempts to penetrate the screen.

(4) Heavy machine guns, caliber .50 machine guns, and 37-mm guns may be attached to counterreconnaissance detachments, usually in the same proportion to the number of these weapons in the regiment that the size of the detachment bears to the size of the regiment.

(a) *Moving screen.*—In a moving screen the heavy machine guns are used in accordance with the principles of their use in offensive action.

(b) *Stationary screen.*—In a stationary screen heavy machine guns are used to support the defense by fire.

(c) In determining the number of counterreconnaissance detachments to be employed, the following factors are considered: Mission of the main body of cavalry, extent of frontage to be screened, possible hostile reaction, nature of the terrain, including the road net, and whether the screen is moving or stationary.

(d) Zones of action or sectors are habitually assigned to counterreconnaissance detachments.

(1) The width of the zone of action or the frontage assigned the detachment depends upon the strength and activity of the hostile forces likely to be encountered, the terrain, and the road net.

(2) The zone of action or sector assigned to a squadron rarely exceeds 8 miles. A troop under favorable conditions may cover a frontage of approximately 5 miles.

(e) In general, counterreconnaissance detachments prevent small hostile patrols from penetrating the zone of action assigned, destroy or drive off small hostile detachments, delay the advance of larger detachments, form rallying points for their own patrols, furnish information to the commander of the main body, and communicate laterally with adjoining detachments.

112. *Patrols.*—Counterreconnaissance patrols are sent out from counterreconnaissance detachments.

(a) In general, the principal duty of counterreconnaissance patrols is to prevent hostile reconnaissance patrols from penetrating the screen. Counterreconnaissance patrols, therefore, should possess sufficient combat power to defeat hostile attempts at penetration. The cavalry commander employs his reconnaissance vehicles and, where necessary, reconnaissance patrols to supplement the information gained by counterreconnaissance patrols.

(b) Depending upon its mission and the situation, the strength of a counterreconnaissance patrol varies from half a squad to a platoon with light machine guns attached. If enemy mechanization is expected, a caliber .50 machine gun may be attached.

c. In general, the conduct of patrols, whether in moving or in stationary screens, is similar.

(1) In a moving screen patrols advance along routes which enable them to keep under observation the likely routes of

hostile advance. They patrol laterally to adjacent patrols. The advance of patrols is coordinated by designating certain lines which must be reached at specified times during the movement.

(2) In stationary screens patrols are posted at observation points from which they can view routes of hostile approach. Active patrolling between adjoining groups is maintained.

113. *Air Corps cooperation.*—The Air Corps assists cavalry on counterreconnaissance by reporting the movements of the enemy, especially approaching cavalry. It attacks hostile aircraft attempting to cross the area of counterreconnaissance.

114. *Attached troops.*—*a. Infantry.*—Infantry, preferably transported in motor vehicles, may be used to reinforce cavalry on counterreconnaissance. In advancing counterreconnaissance the infantry may be used to assist the cavalry in the capture of strongly held localities which impede the advance. In stationary counterreconnaissance it may be used to hold important positions along the screening line, such as defiles, river crossings, or road centers, thus freeing the cavalry for offensive action.

b. Artillery.—The artillery with a cavalry force on a counterreconnaissance mission is used to support the cavalry in either offensive or defensive actions. During the advance of the counterreconnaissance units the artillery generally accompanies the main force. In cases where the defense of a line has become necessary or advisable, all or a part of the artillery may be placed in position for the support of the line or may be held with the main force prepared to move to the support of any part of the line which may be threatened.

MECHANIZED CAVALRY

115. *Mission.*—Mechanized cavalry on counterreconnaissance has as its most appropriate mission the prevention of reconnaissance by large hostile forces and hostile mechanization.

116. *Employment of detachments.*—*a.* Depending on the enemy disposition, width of zone or sector, and the nature of the terrain, a mechanized cavalry brigade may properly employ one or several counterreconnaissance detachments with the main body located centrally in reserve.

b. Each mechanized cavalry counterreconnaissance detachment is assigned a zone in which it advances if the entire unit is advancing, or a sector in which it is posted if the counterreconnaissance screen is stationary and blocks the advance of the hostile reconnaissance. Armored car platoons are employed as patrols. If the zone or sector has numerous roads, it may be necessary to employ armored car sections as patrols. These patrols must be supported promptly to prevent penetration of the screen by hostile reconnaissance units. Advantage should be taken of terrain obstacles and road blocks in a stationary screen.

SECTION VIII

COMBAT PATROLS AND CONNECTING GROUPS

HORSE CAVALRY

117. Combat patrols.—*a.* Combat patrols are security detachments detailed to protect troops engaged in combat.

b. Combat patrols have the following missions:

(1) To furnish timely information of the enemy movements toward or around the flanks.

(2) To drive off small enemy forces which threaten the flanks or rear and to contain larger bodies until suitable preparations can be made to oppose them.

c. The strength of a combat patrol depends upon the size of the force from which detailed, the activity of the enemy, and the terrain.

118. Connecting groups.—*a.* A connecting group is a detachment detailed by a force to maintain contact with a neighboring force.

b. The missions of connecting groups are to—

(1) Keep the commander of the force from which detailed informed of the locations and progress of neighboring units.

(2) Locate and report any penetrating hostile force and to oppose such penetration until arrival of reinforcements or until the threat has ceased.

c. The strength of a connecting group depends upon the anticipated action required of it. When the sole mission is one of information or liaison, it may be relatively weak; when the distance between adjacent forces is considerable and the danger of hostile penetration great, it may be relatively strong.

MECHANIZED CAVALRY

119. Combat patrols.—Mechanized cavalry combat patrols are used for the same purpose and in a similar manner as that prescribed for horse cavalry combat patrols. They may be taken from any element of the mechanized unit.

120. Connecting groups.—*a.* Mechanized cavalry employs connecting groups for the same missions and in a similar manner as that prescribed for horse cavalry connecting groups.

b. Armored car sections or platoons and combat car platoons may be used for connecting groups.

c. Motorcycles in pairs may be employed for connection to the rear or to a flank.

SECTION IX

SPECIAL SECURITY MEASURES AGAINST HOSTILE AVIATION

HORSE CAVALRY

121. General.—*a.* Hostile aviation presents a menace to cavalry operations by attacking the cavalry or observing and rendering reports to enemy ground troops.

b. Due largely to the nature of its missions, cavalry rarely operates under the protection of special antiaircraft weapons or extensive camouflage. Even under favorable conditions, it can rely only upon a small measure of protection by friendly pursuit planes.

c. It is essential that cavalry units be self-sustaining and capable of securing themselves against air observation and air attacks under all conditions of campaign.

122. Antiaircraft security.—In order to provide its own antiaircraft security cavalry must—

a. Keep informed of the characteristics and methods of hostile aviation.

b. Use air scouts to give timely warning of the approach of hostile planes.

c. Be skilled in the antiaircraft use of its own fire weapons.

d. Open fire promptly upon enemy planes.

e. Assume promptly formations of decreased vulnerability or make such appropriate use of cover, darkness, atmospheric conditions, and improvised camouflage as conditions offer.

MECHANIZED CAVALRY

123. Defense against air attack.—*a.* All vehicles are equipped with anti-aircraft machine guns which are alerted for anti-aircraft fire at all times.

b. While marching, normal dispersion of vehicles renders a mechanized unit an unfavorable target for air attack.

c. In an assembly position or bivouac, defense is provided by dispersion, by using overhead cover, and by manning anti-aircraft machine guns.

CHAPTER 4

OFFENSIVE COMBAT

SECTION I

GENERAL

124. Offensive action.—Cavalry must be imbued with the spirit of the offensive. It must be always on the alert to seize the opportunity for offensive in preference to defensive action.

125. Surprise.—Surprise is one of the most important features of cavalry offensive action and should always be sought. Surprise may result from—

- a.* Time of attack.
- b.* Form of attack.
- c.* Direction from which attack is made.
- d.* Location of main attack.
- e.* Choice of mounted or dismounted action.

126. Types of attack.—*a.* Horse cavalry attacks mounted, dismounted, or by a combination of these methods.

b. Mechanized cavalry attacks by fire and shock, usually supported by fire from auxiliary weapons.

c. Whatever the type of attack it employs, cavalry makes full use of its mobility in maneuvering to reach favorable positions from which to deliver the attack.

127. Forms of attack.—Cavalry attacks either in one direction or in two or more converging directions. The latter method includes all forms of attack in which part of the force makes a secondary attack while another part strikes with a direction of attack converging on that of the first part, the point of convergence usually being in rear of the front of the hostile position.

a. The attack in one direction will be the usual form of attack for subordinate units when operating as a part of a larger cavalry unit. It will be the exception for units the size of a squadron or larger when operating alone. However, an opportunity may occur when these larger units, by rapid action, can attack in one direction to effect a penetration of an enemy line which is overextended and thinly held. Larger units may

seize an opportunity for a sudden attack, mounted, against any suitable objective, to gain the effect of surprise.

b. The attack in two or more converging directions is the form usually employed in cavalry action. When this form of attack is used, the attacking force is generally disposed in three parts: A secondary attacking force, sometimes called the pivot of maneuver, about which the bulk of the command operates or maneuvers; a maneuvering force; and a reserve.

128. Reconnaissance.—Before a commander can intelligently engage his command in combat, he must have information upon which to base his future actions. In order to gain this information, he employs his aviation, armored and scout cars, intelligence section, staff, and reconnaissance and security detachments. Before he decides on his scheme of maneuver for an attack, he should, whenever practicable, make a personal reconnaissance, with particular attention to the terrain. If possible, he should be accompanied by his immediate subordinate commanders. Reconnaissance is continued during combat and includes the location and actions of the enemy and the ground over which the forces may operate.

129. Security.—In the approach to the attack, a command protects its front by the use of a covering detachment. During the approach and the attack its flanks and rear are particularly sensitive, especially when opposed by a mobile enemy. Protection must be provided by the use of combat patrols, anti-mechanization weapons, and possibly by the reserve. All subordinate units are responsible for the local protection of their own flanks. Any element of the command operating at such distance that the security provided by the higher commander is not sufficient must provide its own security groups.

130. The approach to the attack.—*a.* The approach march, prior to the launching of either a mounted or dismounted attack, should be made mounted.

b. The formation adopted for the approach should be suitable to the type of action expected, permit rapid deployment to meet an unexpected encounter with the enemy, take advantage of covered approaches, and minimize the danger from hostile fire. The commander designates the formation of the command. Subordinate commanders adapt their formations and immediate routes to existing conditions.

c. During the approach march, the commander, accompanied by such members of his staff and subordinate leaders as he may desire, rides well forward between the covering detachment and the head of the command, preparatory to making his reconnaissance for combat.

131. Orders.—Cavalry attack orders usually are issued orally. They are issued to the assembled subordinate commanders, when practicable, at a point from which they can see the objective. When the attack is made in two or more converging directions, they are issued prior to the separation of the various elements of the attack. Complete orders, giving a mission to each unit of the command, should always be issued. The orders are often given in fragmentary form for the purpose of saving time. Orders are issued sufficiently far in advance to permit subordinates as much time as possible for reconnaissance and for the preparation and issue of their own orders.

132. Zones of action.—Zones of action may be prescribed in mounted, dismounted, or maneuver attacks when it is necessary to restrict subordinate units to certain lines or areas in order to prevent intermingling or confusion.

133. Objectives.—Each attacking unit should be assigned an objective or objectives. These may be indicated by designating—

a. A decisive terrain feature.

b. Enemy reserves or other troops.

c. The enemy's flank or rear, or both flank and rear. Generally this method is used when the enemy's main line of resistance is fairly well determined but the location and strength of his reserves are not definitely known.

134. Time of attack.—a. When the command attacks in one direction, this may be indicated by prescribing a definite hour or by prescribing that the unit attack upon order of the commander.

b. When the command attacks in converging directions, this may be indicated by—

(1) Prescribing a definite hour for one or both elements. This method insures the best coordination of the attack and should be used whenever existing conditions render it feasible.

(2) A signal, visual or otherwise. This method may be necessary when conditions of terrain and the enemy situation

are so vague or uncertain as to render the prescribing of a definite hour impracticable. When employed, care should be taken to insure that the signal prescribed can be understood.

(3) Making the time of attack of one element dependent upon the time or progress of attack of the other. This presupposes that the terrain over which the attacks take place is clearly visible to one or both elements or that close liaison exists. Such a method of time coordination may prescribe that one element attacks in conjunction with the other. This means that when it is clear that the attack of one element has been launched, the attack of the other is launched at the same time or at such time thereafter as to bring the full weight of both attacks on the enemy at the same time.

(4) One or both elements being directed to attack as soon as in position. This partakes largely of the nature of a piecemeal attack, but frequently may be the only feasible method, due to difficulties of terrain, uncertainty, or rapidly changing conditions in the enemy situation.

135. Control.—Control of the action and of his subordinate units by a commander during the attack is difficult. He must rely to a great extent on the intelligent initiative of his subordinate commanders in carrying out his general plan. He exercises such control as is possible by utilizing all practicable means of communication, by making full use of his staff, and by the use of his reserve at the proper time. When the command is divided into a secondary attacking force and a maneuvering force, the commander usually goes to a position from which he can observe the action of both. He should at all times be in close communication with his command post and his reserve.

136. The reserve.—*a.* A part of a command, the reserve, is held out of the fight initially for employment by the commander of the whole force in furtherance of his plan of attack or for use according to the development of the action. Its strength usually varies from one-third to a small fraction of the command. A maximum is held out against an enemy composed entirely of cavalry; a minimum against an enemy which is either lacking or weak in cavalry. Unless horses are wholly absent from the field of battle, the reserve should remain mobile in either mounted or dismounted attack. In the usual action

of cavalry against cavalry, it should be ready to act mounted without delay. In this case, fleeting opportunities for mounted attack may occur or the reserve may be needed promptly to repel rapidly developed or surprise attacks. When the enemy is without cavalry, there is less danger of surprise, but there may be opportunities in which the quick launching of the reserve in attack will produce decisive results. Its employment will vary in accordance with existing conditions. As soon as the reserve is committed, a new reserve must be organized without delay.

b. The commander of the reserve must be in close communication with the commander of the whole force without losing immediate control of the reserve.

c. In emergencies, he must not hesitate to act without waiting for orders. He must maintain personal reconnaissance and keep close contact with the attacking troops. He should anticipate possible uses of the reserve and prepare tentative plans therefor.

d. Before moving his reserve from any position, the commander of the reserve must select a new location, unless one has been designated by the commander, and decide on the method of reaching it.

e. The reserve is usually echeloned to one or both flanks in a position from which it can best support the main effort or protect the flanks.

f. When the assaulting troops reach the enemy or attain their objectives, the reserve must be ready to take advantage of the situation to give an added impetus to the attack at a critical moment, to clinch the victory, or to resist counterattack. It may pursue a retreating enemy or occupy the ground captured. In case of the withdrawal of the assault troops, the reserve must cover their withdrawal and reorganization.

137. Reorganization.—After an attack, whether successful or not, the commander must reorganize his command preparatory to further operations.

138. Pursuit—assembly point.—When any part of the command may be expected to attack mounted, the attack order issued by the commander informs subordinates whether or not they are to pursue. If a pursuit is ordered, the limits of the pursuit should be prescribed and an assembly point or points

designated. This point should be located within the limits of the pursuit and where, as far as can be foreseen, the unit will be in the best position for future action.

139. Use of chemicals in the offensive.—Situations permitting the use of chemicals other than smoke will seldom arise when cavalry opposes cavalry. The use of smoke is habitual in the attack by mechanized cavalry to neutralize hostile anti-mechanization weapons. It is of equal value to horse cavalry when available.

140. Reconnaissance vehicles.—Armored cars and scout cars reconnoiter the front, flanks, and rear of the enemy to gain information of hostile dispositions, envelopments, and the approach of reinforcements.

SECTION II

HORSE CAVALRY

141. Mounted attack.—*a. Elements of success.*—Mounted attacks depend for success upon the effective use of individual weapons, the degree and effectiveness of supporting fires, and the degree of shock at the decisive point. The chances of success are greatest when the mounted attack is supported by intensive and effective fire, and is characterized by surprise, speed, and cohesion. Results are most decisive when, in addition, the enemy is struck in a formation or position ill-suited for resisting the shock. A frontal mounted attack against a well-organized dismounted enemy in position will rarely be successful. The mounted attack usually will be made in one direction.

b. When employed.—(1) No hard and fast rules can be laid down as to precisely when the mounted attack should be employed. There are, however, certain favoring conditions that a commander should seek before committing a force to mounted action in any given situation. Following are some of the conditions that favor a mounted attack:

(a) A small unit operating alone on a mission requiring offensive action.

(b) An enemy who may be attacked in flank or rear while pinned to the ground by effective fire or attack by other troops.

(c) An enemy so situated that he may be attacked by surprise, before he can make adequate preparations to meet the attack.

- (d) An inferior, demoralized, or retreating enemy.
- (e) An enemy suddenly encountered at close quarters.
- (f) To relieve other friendly troops who are hard pressed, where their relief must be effected even at the sacrifice of the mounted troops.

(g) A force surrounded by a greatly superior enemy in a situation where rapidity of action affords the best chance of a break-through.

(h) Exceptionally, a mounted attack is appropriate when the terrain to be covered consists of an extensive fire-swept area offering little or no cover to a dismounted advance. An attack of this nature should be attempted only as a last resort, for it can be successful without prohibitive losses only when the enemy is greatly outnumbered or when his troops are disorganized or poorly trained.

(2) The mounted attack may be used when the unit is operating alone or as part of a larger unit or command.

c. Formations.—(1) Formations for attack are adopted to meet each special situation. Influencing factors are the nature of the objective, whether stationary or moving, and whether it consists of a mounted or dismounted force; the enemy formations, whether close or extended order; the nature and effectiveness of hostile fire and of friendly supporting fires; the factors of terrain and visibility. The attack will be made normally in a series of successive lines. The number of lines depends on the terrain and the size of the force involved.

(2) In the mounted attack by a squadron or larger force, while the formation for the command as a whole is prescribed in the attack order, the formations to be adopted by subordinate units are usually left to the initiative of the respective subordinate commanders. If, however, the enemy situation is clear and units are not unduly separated, or if it is apparent that a high degree of coordination is necessary, the attack order may also prescribe the formations to be employed by subordinate units.

d. Terrain.—Obstacles such as wire fences, deep ditches or gullies, streams, boulders, thick underbrush, marshy ground, etc., which will hold up or disorganize the attack before the objective is reached must be avoided or passed by the use of proper formations. The use of cover in the approach is advan-

tageous when available, as it increases the chance of surprise and lessens the effect of hostile fire. A change in formation may enable a command to take full advantage of cover when it might otherwise be greatly exposed.

e. Hastily prepared actions.—(1) These actions are sudden and unforeseen, as when a maneuvering force unexpectedly encounters a hostile force. There is no time for prolonged preliminary reconnaissance. The latter must always be made by the leader, but it may be that a quick glance and a hasty survey of the situation must suffice. There is no time for deliberate deployments. The attack must be launched abruptly and at an extended gallop. Such actions may be required from any formation. Units should make such attacks upon short commands or signals. Each subordinate unit is led by its commander. The personal example of leaders is most important.

(2) The general principle is that any unit acting alone executes these attacks by launching its next smaller units successively. Normally when thus launched by a higher echelon the regiment attacks in line of squadrons, or squadrons in echelon; the squadron attacks in line of troop column of platoons; the troop attacks in column of platoons. All attacking lines are deployed as foragers with approximately 100 yards between lines. Machine-gun units conform to the foregoing, the lines of foragers being composed of the men without pack animals, the packs following such lines at about 30 yards. Each unit, when launched, should be given an objective.

f. Deliberately prepared actions.—In this case there is preliminary reconnaissance by the leader. There is sufficient time for the leader to issue detailed orders. Units are deliberately deployed; the designated weapons are drawn by command; the gaits are ordered, the pace is increased gradually, and the movement terminates with a charge at full speed over a short distance or sometimes by dismounting upon arriving close to the enemy and engaging him in his position. The attack is always supported by the fire of machine guns.

(1) *Dismounted enemy.*—(a) If the enemy is dismounted, his action is practically limited to the use of fire power. In attacking such an enemy the object is to close with him in hand-to-hand combat with as few losses and as quickly as possible. The attack should be directed at his flank and rear. It

should be made in four or more successive lines of foragers at distances of approximately 100 yards between lines. The first echelon of two or more successive lines should operate as "ride-through" lines to locate and engage hostile supports and reserves. The second echelon of two or more lines should operate as "mop-up" lines. Usually the leading echelon is given a frontage and direction of attack. Each echelon should be given its mission. The strength of each echelon is prescribed by the commander of the whole force. The formation of each echelon or the units within each may be prescribed by the higher commander or by the respective subordinate or unit commanders. In the case of smaller units which can attack in only two lines, both lines should operate as "ride-through" or "mop-up" lines in accordance with the strength and dispositions of the enemy. The reserve should follow the attacking lines at such distance as to permit it to maneuver sufficiently to be able to assist either the "ride-through" lines or the "mop-up" lines or to be otherwise employed by the commander in accordance with the developments of the situation.

(b) Units must quickly reorganize and promptly occupy the captured ground to repel an immediate counterattack.

(2) *Mounted enemy*.—If the enemy is mounted, he has equal mobility. He must be defeated by superior strength at the point of impact. The formation generally should conform to that of the enemy. However, against an enemy in close order who has effective supporting fire, an open formation should be used. The attack is launched in four or more successive lines, either echeloned or maneuvered on the flanks so as to avoid crashing into the rear of the preceding lines. The hostile supports and reserves should be located and attacked. The reserve follows in appropriate formation and at such distance as to permit freedom of maneuver and prompt support of the attacking lines. It is essential that the successive lines rally promptly in order to charge again, either against the original enemy or new forces.

g. Machine guns in the mounted attack.—(1) *Heavy machine guns*.—(a) The heavy machine gun is the principal supporting weapon in the mounted attack. Every available gun should be in action, none held in reserve. None should be attached to subordinate units unnecessarily, as they render better service when their fire can be centrally controlled. They do not take part in the assault. Their mission is to pin the enemy to the

ground with fire, to support the mounted elements with fire, to protect their flanks, to fire on enemy supports and led horses, to cover the reorganization, to pursue by fire, to break up counterattacks, and to cover a withdrawal. To accomplish these missions, they fire from one flank or both flanks, or exceptionally use overhead fire. Some riflemen, possibly with light guns, may be used to protect them.

(b) A mounted attack against a dismounted enemy usually is prepared deliberately. It requires close coordination of fire and maneuver. This may include a preparation of fire followed by a sudden launching of the attack, or a sudden opening of fire accompanying the attack, or both. Fire should be directed first on the whole enemy line and then shifted to that part of his line to be assaulted. The fire should be as nearly as possible at right angles to the direction of attack. Overhead fire may be used if a suitable position 800 to 1,500 yards from the enemy and observation of strike can be obtained. The fire may be indirect if the range is accurately known, friendly troops can be seen, and strike is visible. When the mounted attack approaches the enemy, fire must be stopped or shifted to prevent losses. When the assault goes home, a portion of the heavy guns may move forward to assist in consolidation.

(c) The mounted attack against mounted troops usually will be hastily prepared. The fire preparation will be short or non-existent. Fire will be opened as soon as possible and reach its maximum intensity simultaneously with the launching of the attack. It will be directed at the enemy mounted elements rather than at any machine guns he may have in action. Direct fire not overhead is normal. Concealment of guns is of secondary importance to rapid selection and occupation of position.

(2) *Light machine guns.*—Light machine guns in units which have no fire support from heavy machine guns may be used in the mounted attack, according to the principles of the heavy machine guns, to carry out the latter's mission of supporting fire. When heavy machine guns are present, however, the light guns may be grouped with the heavy guns or follow the rifle units into the enemy position, where they prepare to pursue by fire, protect the reorganization of mounted units, and meet unexpected emergencies.

(3) *Caliber .50 machine guns.*—Caliber .50 machine guns should be located to protect the flanks and rear of the command from attack by hostile armored vehicles. Some caliber .50 machine guns may accompany the troops making the mounted attack for use against such armored vehicles as may be encountered by these troops in the area in rear of the attack objective. In the absence of any threat from hostile mechanization, caliber .50 machine guns may be used as antimachine-gun weapons.

(4) *37-mm guns.*—37-mm guns should be used in a deliberately prepared mounted attack against a dismounted enemy to silence enemy machine guns during the preparatory fire. In a hastily prepared mounted attack against cavalry there will usually be little time to locate enemy machine guns in action or to silence them, but the 37-mm guns should make every effort to do so.

h. Armored cars and scout cars.—Armored cars and scout cars assist in the mounted attack by conducting reconnaissance of the objective and of routes of approach thereto. As the attack closes with the enemy, armored cars and scout cars may be employed to—

(1) Maneuver to assist the attack by fire from favorable positions.

(2) Continue reconnaissance of the flanks and rear of the enemy to gain information of the movements of hostile reserves.

142. *Dismounted attack.*—*a. General principles.*—(1) Within the limits of its means, cavalry fights dismounted in the same manner as infantry. The underlying principles are the same, but the technique varies somewhat because of a difference in organization, equipment, and armament.

(2) Dismounted cavalry usually attacks only for limited objectives; long dismounted advances are exceptional. It is not equipped, armed, or organized for long sustained advance. Its attack is, therefore, characterized by comparatively little time devoted to preparation, rapidity of action, and fire consisting of a relatively high proportion of machine-gun fire. The advance culminates in the assault, in which rifles and pistols are used to overcome the last enemy resistance.

(3) If necessary to move forward to successive positions, advantage is habitually taken of possible opportunities to re-

sume the advance mounted. Led horses accordingly are kept as close to the firing line as the situation permits.

b. Deployment.—When a unit is operating alone or making the main attack of a larger unit, it should be disposed in some depth. When making a secondary attack it may have little or no depth.

(1) *The squadron.*—The squadron generally deploys for the attack with an assault echelon (firing line and supports) and a reserve.

(2) *The regiment.*—The regiment generally deploys in three echelons; the assault echelon, the squadron reserves, and the regimental reserve. The squadron is the attack unit. In situations requiring a deep penetration without a passage of lines or when strong resistance is expected, the deployment may be with squadrons abreast, each squadron assigned a narrow frontage. When the enemy situation is not clear or when a passage of lines is anticipated the deployment should be in column of squadrons.

c. The approach.—(1) Prior to engaging in a dismounted attack cavalry approaches mounted as close to its objective as the situation and the terrain permit. It takes advantage of covered avenues of approach and crosses exposed ground at speed and in open formation. The mounted approach usually is made prior to the deployment into attack formations.

(2) The dismounted approach is made with the assistance of the supporting fires of all available auxiliary arms and weapons and by the use of cover and maneuver. It advances as close as possible to the hostile position before opening fire. For rifle units this should be at ranges of approximately 350 yards except that the light machine guns, and especially skilled riflemen, may open fire at greater ranges when the situation so demands. Once fire is opened and fire superiority gained, the attack is pushed forward as rapidly as possible.

d. The fire fight.—(1) The best protection against losses during the attack is adequate fire support for it inflicts losses upon the enemy and has a decided moral effect upon those not casualties.

(2) Rifle units advance to assaulting distance under cover of their own fire and the supporting fire of artillery, heavy machine guns, 37-mm guns, and light machine guns.

(3) In order to gain and maintain fire superiority the fire power of the attack is coordinated. Prearranged plans are required for the employment of artillery and machine guns. The artillery is disposed, as far as practicable, in initial positions suitable for covering the deployment, the advance, and the successive phases of the attack.

(4) During the attack all units are mutually supporting; the more advanced elements assist by fire from the flank those held up. It is in this way that the hostile resistance may be broken down and the attack pushed forward on a broad front. The advance of the assault troops is mainly in the hands of subordinate commanders who advance the attack of their own units and assist adjoining units by fire and movement. Commanders intervene when necessary to push forward units that hesitate, to secure cooperation between attacking units, to furnish added fire support where needed, and to influence the action by suitable use of reserves. When the assault units are held up in front of a strong hostile resistance fire superiority must be gained by employing to the maximum the fire power of all machine-gun, 37-mm gun, and artillery units available, and the resistance out-flanked by the proper use of the reserves. Such utilization of the reserves will give more decisive results than the reinforcement of the units held up.

(5) If the attack is completely stopped, the assault units must hold wherever they may be, pending a resumption of the attack with the assistance of supporting troops or added fire power. Should the attack not be resumed a definite line of resistance, based on the line held by the assault units, should be established by the displacement of machine guns and other supporting weapons or units to new positions favoring the defense.

(6) The position of commanders should be such that they can observe the progress of the assault units and insure that they are given the maximum fire support by available machine guns, 37-mm guns, and artillery units available, acting directly under their orders. They must anticipate possible counterattacks and be prepared to check any menace against their flanks.

e. The assault.—The attack culminates in the assault. The order for the assault may be given by the commander of the whole force or by subordinate commanders. Frequently the assault will be initiated by some individual or unit in the fighting

line whose example must be followed instantly by the remainder of the line. The hostile position may be reduced by local assaults on hostile organized groups executed by small units, such as squads, platoons, or troops. Commanders should anticipate either of these contingencies and be prepared to assist and give added impetus to such assaults by the unhesitating use of supports and reserves.

f. Termination of the assault.—When the final objective is taken, the position must be occupied immediately for defense by a suitable disposition of the assault troops or the reserve. This defense may be of a temporary nature for protection against counterattack or for a more protracted period pending relief by other units. Generally it will be necessary completely to reorganize the assault troops. During this period the command is most vulnerable to counterattack. Covering detachments to the front and flanks should be posted without delay to protect this operation and the occupation of the position. The commander, in his attack order or subsequently, may direct a more complete organization for defense.

g. Pursuit.—Unless restricted by the mission or higher authority, a successful attack should be consummated by a pursuit should the opportunity be presented. If such action can be foreseen, the mobile reserve should be withheld from the fire fight and so moved or located as to be able to start the pursuit without delay.

h. Machine guns and 37-mm guns in dismounted attack.—(1) *Light machine guns.*—The details of the use of the light machine gun in the dismounted attack are covered in Cavalry Field Manual, volume I.

(2) *Heavy machine guns.*—Heavy machine guns may be used to support the approach and attack of the regiment as a whole; some may be used for this purpose, while others are attached to squadrons; or all the guns may be attached to squadrons. The first use is preferable from the viewpoint of control and supply of the guns and should be used when the front of attack is small enough for the guns to cover from a single location all parts of the enemy position. The second method should be used when the guns necessary to cover one squadron will be so far from the guns in general support as to preclude control by the machine-gun troop commander, and the third method, which is

exceptional, is used only when the ground is such that guns in general support could accomplish no good. No guns should be held in reserve. The mission of heavy machine guns is to support the assaulting echelon by fire at all suitable ranges on points where the advance is being held up; fire on areas such as woods, villages, ravines, etc., which may conceal the enemy; fire to protect flanks or gaps in the line; and fire at fast rates at the decisive stage of the combat. The presence of the light machine gun lessens the necessity for heavy guns actually in or near the firing line. Fire may be direct or indirect, the first being preferable, and in either case may be overhead. Heavy machine guns cover the assault on the enemy position by fire on the enemy front line, if possible, or by lifting to targets in rear. They enter the position, assist in its consolidation, and provide protection against counterattack.

(3) *Caliber .50 machine guns.*—In a dismounted attack caliber .50 machine guns should be disposed in depth and well to the flanks and in rear of the command to protect it against hostile armored vehicles which may appear from the front or unexpected directions. In the absence of 37-mm guns, caliber .50 machine guns may be used as antimachine-gun weapons in addition to the missions indicated above.

(4) *37-mm guns.*—The primary function of these guns is to silence enemy machine guns. They should be left under the control of the machine-gun troop commander, who will use them under his general mission of supporting the attack.

i. Armored cars and scout cars.—Armored cars and scout cars assist the dismounted attack by reconnaissance to the flanks and rear of the enemy. They seek to locate the reserves and give timely warning of changes in hostile dispositions. Some cars may assist the general attack by utilizing the road net to move rapidly to favorable locations, deliver sudden and intense surprise fire on favorable targets on the hostile flanks and rear, and withdraw rapidly to continue in observation.

143. Attacks in converging directions.—*a. General principles.*—When cavalry attacks in two or more directions the secondary attacking force attacks dismounted, while the maneuvering force attacks either mounted or dismounted or both mounted and dismounted. Each attacking element follows the

general principles announced for the dismounted attack or for the mounted attack.

b. Secondary attacking force.—(1) This force engages the enemy either by fire or by fire and movement for the purpose of providing fire support for the maneuvering force, of holding him to the ground, of making him deploy, preferably in a wrong direction, or of preventing him from reinforcing the front to be attacked by the maneuvering force. The strength of this secondary attack varies, depending upon the plan of action, the action of the enemy, and the terrain. It is given sufficient strength to enable it to carry out the mission assigned to it, but no more. It should be strong in fire power, and to this end is supported by, or has attached to it, all fire power which is not needed with, or in support of, the maneuvering force.

(2) When, in the opinion of the commander, the terrain over which the secondary attack is to operate affords good cover for an advance, the secondary attack is given an objective and attacks as in any dismounted action. Terrain and the action of the enemy permitting, it works forward by fire and movement to its assault position from which, by rapid fire, it places a heavy fire on the enemy position to support the attack of the maneuvering force. If the maneuvering force attacks mounted, the secondary attack makes its assault as soon as its fire is masked, and closes with the enemy to seize the position. If the maneuvering force attacks dismounted, the secondary attack endeavors to coordinate its assault with that of the maneuvering force.

(3) Exceptionally, when the secondary attack is confronted by terrain or obstacles which, in the opinion of the commander, make an advance from its attack position impossible without undue sacrifice, it is not expected to advance until the assault has been made by the maneuvering force. When the fire of the secondary attack has been masked by the maneuvering force, the secondary attack endeavors to move forward, dismounted or mounted, to mop up the enemy position and assist the maneuvering force in making complete the capture of the position. However, should conditions at any earlier time offer an unexpected opportunity for the secondary attack to advance, it should push forward with aggressiveness and determination.

c. Maneuvering force.—(1) This force usually makes the decisive attack and when so used generally consists of the bulk of the command. It is supported by a preponderance of the available fire power of artillery, machine guns, or other weapons.

(2) When conditions are such that this supporting fire can be used effectively from a central position, it is retained under the control of the commander of the whole force. When its use may prove more effective under the control of the maneuvering force commander, some or all of it may be attached thereto.

(3) The maneuvering force conducts its approach and attack in a manner similar to that of any other cavalry force.

(4) It may attack mounted or dismounted or by a combination of the two methods. This is usually decided by the commander of the maneuvering force after his personal reconnaissance upon arrival at his attack locality and a consideration of such elements as the mission, enemy dispositions, time, distance, and terrain. If the enemy presents an exposed flank or rear, if there are no obstacles to prevent galloping, or if the ground to be crossed is open, affording neither cover for the advance of dismounted troops nor for further maneuver, the decision normally will be to attack mounted. If the enemy is strongly occupying a position facing the direction of attack, or if the terrain furnishes good cover for advancing dismounted and is impassable for mounted troops, the decision normally will be to attack dismounted or to subdivide the command into a secondary attack, dismounted, and another maneuvering force which in turn may attack mounted or dismounted.

(5) When a maneuvering force attacks mounted, care must be taken that its attack is not launched prematurely. For such an attack to receive full benefit from the efforts of the secondary attack, the latter must be allowed time to make its maximum pressure felt by the enemy, either by a heavy concentration of fire or by fire and movement to an assault position.

d. Coordination of the attack.—In order to obtain the maximum benefit from the concerted action of the secondary attack and the maneuvering force, every available means must be utilized to secure the coordination of these two attacks. Liaison must be established and maintained between them. This may be done by the use of liaison squads or groups operating between the two, by mounted messengers, by radio, by pyrotechnics or

other visual signals, by scout or armored cars, or motorcycles. As many means as necessary should be used simultaneously to assure that liaison is not lost. When pyrotechnic or other visual signals are sent from the maneuvering force, care should be taken to withhold them until the attack is launched in order to avoid premature warning to the enemy of the impending attack. The object of such signal, especially in a mounted attack, is to notify the secondary attack to increase its fire temporarily and then to raise, shift, or cease its fire to avoid firing into the maneuvering force. In the case of a combined attack it may be necessary for the maneuvering force to wait for a message or signal from the secondary attack to avoid the launching of the main attack before the secondary attack has advanced to the point where its full effect is being felt by the enemy.

e. Orders.—The commander of the whole force should assign missions appropriate thereto to the secondary attacking force. He should also assign a mission or objective to the maneuvering force and, where practicable, designate for it a direction of attack or a general locality from which its attack is to be launched. In exceptional cases, for certain special reasons, he may prescribe the type of action, mounted or dismounted, to be employed by the maneuvering force.

f. Armored cars and scout cars.—(1) Armored cars and scout cars may be attached to the secondary attacking force or to the maneuvering force or may be given missions requiring co-operation with both elements of the attack.

(2) The mission of the cars is primarily reconnaissance. They maneuver on the hostile flanks and rear to discover and give timely information of changes in hostile dispositions, primarily of movement of reserves.

(3) Prior to and during the attack some cars may be retained for liaison to assist in the coordination of the attack of the maneuvering force and the secondary attack.

(4) When the attack closes with the enemy the cars may maneuver to assist the attack by fire from favorable terrain features, preferably on the hostile flank and rear. They may continue reconnaissance to give timely information of possible hostile counterattacks and to disorganize counterattacks by fire on the flank and rear.

SECTION III

MECHANIZED CAVALRY

144. General characteristics.—*a.* The organization and equipment of the mechanized cavalry are designed primarily for offensive combat. Its characteristics favor striking quick, hard blows. The effect of combat vehicles is to crush and smother resistance by their speed, weight, and fire power. Mechanized attacks are characterized by sudden blows in the most favorable directions.

b. Rapidity of maneuver and speed of attack not only permit surprise but also constitute a defense against hostile mechanization.

c. Mechanized attacks are supported by the maximum fire power available.

145. Development and approach.—*a.* In anticipation of combat, a mechanized regiment is disposed with the reconnaissance troop and the advance guard in front, the combat-car squadrons and machine-gun troop well in hand as the main body, the maintenance elements close up in rear, and the supply and administrative elements well behind.

b. The reconnaissance troop conducts wide and deep reconnaissance for the purpose of providing information of the terrain and of the general outline of the enemy, with particular emphasis on ground favorable or unfavorable for mechanized operation. Under certain situations the troop may be called upon to secure favorable ground and hold it until the arrival of other elements or execute delaying or harassing missions. It covers the flanks in combat.

c. In offensive combat the advance guard is charged with securing favorable ground to cover the deployment of the main body. This may require both offensive and defensive action.

d. The main body organizes for the attack under cover of the advance guard. If the plan involves a wide envelopment by the main body or parts thereof, these elements provide their own covering detachments.

e. A preliminary reconnaissance is made of the area over which the approach march is to be conducted.

f. Orders for the attack may be issued orally to the assembled staff and squadron commanders. At the same time they

may be dispatched by radio and motorcycle messenger to the units concerned.

g. Troop maintenance elements remain with their respective organizations until attack orders are issued, at which time they are directed to the location of the service park.

146. Main and secondary attacks.—*a.* Combined attacks are normal. However, the situation may point to a prompt direct attack to take full advantage of surprise or of a temporarily favorable situation.

b. Since the combat cars provide the striking power of a regiment, the main effort is habitually made by combat-car elements. The machine-gun troop and mortar platoon which are normally employed to support the main attack must be ready for prompt displacement forward to occupy ground gained by combat-car attack and to consolidate the position.

c. The reserve, which is also composed of combat-car elements, is committed to the action by the regimental commander.

147. Deployment and attack.—The assault echelon of combat-car units normally deploys both laterally and in depth. The hostile situation and the terrain determine the formation. Within the troop the formation is usually column of platoons. Troops maneuver in their approach so as to take as much advantage of cover as rapid advance permits.

148. Assault.—*a.* The power of mechanized attack lies in the crushing ability of the combat car and its fire power.

b. Fire from moving cars rapidly increases in effectiveness as the objective is approached. Therefore, when combat-car elements have deployed and advanced to a point from which their objective is readily discernible and their frontage and direction fixed, the leader signals the assault. Cars are driven full speed ahead. They deliver a maximum volume of fire as they close with the enemy and overrun the hostile position.

c. The assault is normally launched from 200 to 500 yards from the objective. Once the assault is launched, control by the platoon leader is difficult until the objective is passed.

d. When the assault masks the supporting fire, the machine guns and mortars are displaced forward.

149. Consolidation of positions.—*a.* Consolidation of positions is accomplished by disposing machine guns and mortars in mutually supporting positions so as to hold the captured

objective and cover the reorganization of combat-car elements.

b. Once the machine guns and mortars have displaced forward, they are prepared to resist hostile counterattack.

c. The coordination of the forward displacement of machine-gun and mortar elements is a function of the regimental commander.

150. Reconnaissance and security.—a. As combat becomes imminent the reconnaissance elements gradually merge their reconnaissance missions with their security missions. The platoons occupy key flank positions where they act as combat patrols and from which both mounted and dismounted reconnaissance can be continued.

b. Local reconnaissance and security missions are executed.

151. Pursuit.—a. The situation determines to what extent pursuit is carried out. In general, the attack is carried on by successive stages until organized resistance is overcome. The characteristics of mechanized cavalry fit it to break up hostile unity and organization and keep the hostile elements in a disorganized state. Pursuit then consists of a continued series of thrusts against enemy formed bodies or organized localities.

b. Against horse cavalry, pursuit is seldom carried to great lengths, due to the fact that it is mechanically uneconomical to carry on long and vigorous action against a greatly dispersed opponent. Against hostile mechanization, pursuit should be carried to annihilation. Against foot troops, pursuit can easily be kept up and, if these foot troops are motorized, it is especially important to destroy their transportation.

152. Control.—a. The chief requirements of control during combat are simplicity of plans and formations, rigid adherence to the principle of following the leader, reliable radio and visual communication, and prearranged assembly points for the various elements of the command.

b. Since mobility of all elements may result in considerable dispersion, the greatest possible latitude is given subordinates to accomplish their missions in their own manner under the general plan. This plan must not only be simple, but must be thoroughly understood by all.

c. During the approach, formations are as flexible as conditions of the terrain require, each car commander selecting his route and rate of march to conform to the general formation,

taking full advantage of cover. Where natural or artificial obstacles reduce speed, the vulnerability of vehicles to hostile fire is increased. Therefore, it is highly important that speed be maintained under hostile fire regardless of temporary deviations from prescribed intervals and distances.

153. Service park.—*a.* Maintenance is continued until the last practicable moment before combat and is resumed at the first opportunity during or after combat.

b. The motor officer is charged with the selection of the service park and its operation. He follows the course of action of the combat elements so as to be able to meet conditions promptly.

c. The maintenance officer directs the work of the regimental maintenance in the service park.

d. The attached medical detachment is usually posted at or near the service park.

e. The motor officer is responsible for the immediate defense of the service park. For this purpose he employs the vehicle guns either mounted or dismounted.

SECTION IV

ATTACK AGAINST A RIVER LINE

HORSE CAVALRY

154. Definition.—The term "river line," when so used, signifies the water's edge on the defender's side of the river.

155. Procedure.—*a.* Due to its mobility, cavalry can effect river crossings by making wide detours to weakly guarded or undefended points and cross, by swimming or otherwise, to strike the defender in flank or rear. This should be the normal procedure when possible. Cavalry should not be expected to force a crossing against strong opposition without the assistance of additional supporting and auxiliary troops.

b. When the crossing is opposed, the attack against a river line requires superiority on the part of the assailant and thoroughness in planning and preparation, since the river tends to disorganize and disperse the strength of the attacking force.

c. Depending on the situation, the attack may turn, envelop, or penetrate the hostile position. In order to disperse the

defender's strength and deceive him as to the point of the main attack, cavalry usually will make a feint or secondary attack at one or more points, while the bulk of its force crosses at some other selected point or points. Such a scheme of maneuver is merely an adaptation of the typical maneuver attack of cavalry. If the maneuvering force meets with appreciable opposition, it should endeavor to continue its maneuver until it has so dispersed the defending force that the crossing can be made with a minimum of combat.

156. Terrain.—When the crossing must be made against hostile resistance, terrain has a decisive influence on the points selected for crossing. It should provide covered approaches to the river and commanding terrain for artillery observation and machine-gun support on the attacker's side and a minimum of cover for the defender. The river banks should facilitate the operations of entering the river and landing on the opposite side. Narrow points in the river and shallow water near the banks are desirable. River bends which form a salient toward the attacking force favor concentration of frontal and flanking fire on the defender. However, such salients restrict the maneuver of troops after crossing and may necessitate a frontal attack against any enemy position encountered at the base of the salient. The terrain on the defender's side should afford a suitable bridgehead position, the capture of which would deny artillery observation to the enemy, afford protection for the crossing of the remainder of the command, and provide adequate maneuver space for the development of the whole command for the attack following the crossing.

157. Major operations.—*a.* The engineer troops, organically part of any large cavalry unit, will be available for river crossing operations of the latter. The attachment of engineers to smaller units depends entirely upon their availability and the obstacle that the stream presents. Every effort should be made to attach pontoon engineers with equipage to cavalry negotiating the crossing of an unfordable stream. Thorough coordination with organic or attached engineers should be obtained by the judicious consideration of the recommendations of the engineer commander.

b. The most difficult part of a river crossing operation lies in harmonizing the tactical and technical requirements.

c. The actual crossing of the attacking troops depends largely on the technical training of the troops.

158. Minor operations.—When engineers do not form a part of the command, the combat troops must devise and operate the means of crossing. This may involve the construction of improvised rafts, the assembly of available boats, or the swimming of part or all of the command.

159. Phases.—An attack against a river line that cannot be crossed unopposed may be divided into three phases:

a. Reconnaissance and preparation for crossing.

b. The operation of actually crossing the river and gaining a foothold on the defender's side of the river.

c. The operation of continuing the attack and of obtaining possession of the controlling terrain on the defender's side of the river.

160. Reconnaissance.—a. Reconnaissance begins at an early stage of the offensive operations. By the use of all available reconnaissance agencies including aviation the commander seeks information upon which to base his plan of attack. Such reconnaissance is both tactical and technical.

b. The tactical and technical reconnaissance should be conducted jointly. This promotes coordination from the start. Tactical information should include the locations of fords or other points of crossing both for the main attacks and feints and more detailed information of the nature of the terrain on both sides of the stream and of the manner in which the enemy is holding the line, such as the strength and location of the enemy's troops at the river's edge and the disposition of his supports and reserves. Much of this must be done by the crossing or attempted crossing of numerous small patrols.

161. Preparation for crossing.—During the reconnaissance the command should be held well back from the river. After the points for crossing have been selected the commander should so conduct his march that he can bivouac in front of the crossing selected for the feint or march toward it. While the feint troops continue to their objective the remainder of the command should change direction, either after dark or by utilizing all available ground cover, and move toward the vicinity selected for the main crossing. If this move is made under cover of darkness it should be so timed that the crossing

may begin at daylight or earlier. The combat troops should arrive about 1 hour prior to the time set for the crossing. The technical troops, with a covering detachment, should precede the command and make the necessary preparations to cross the combat troops. The combat troops should move forward in the order of their scheduled crossing. Supporting weapons should be at or near the heads of the leading elements in order to facilitate their early emplacement to support the first troops to cross.

162. The crossing.—*a. The feint.*—(1) This is made usually as the secondary attack of the operation. Its purpose is to attract the hostile supports and reserves and induce the enemy commander to commit his forces in a wrong direction or cause him to delay their commitment, due to uncertainty, long enough for the main attack to gain a strong foothold on the defender's side. To do this it should start its operations sufficiently early, prior to the main attack, to entice the hostile reserves to its front, yet not so early that its efforts will be spent before the main crossing begins. It should be made as realistic as possible and a crossing actually made should the lack of hostile resistance permit. In such case it may develop into the main attack and be followed by troops originally assigned to the main effort. Or it may, after crossing, move to the assistance of the main attack by threatening or operating against the enemy's flank and rear. It should be strong enough to accomplish its purpose and to protect itself should it succeed in effecting a crossing.

(2) If the secondary attack does not make a crossing, it should be ordered to desist as soon as the success of the main crossing is assured. It then moves as rapidly as possible to the point where the crossing has been made and rejoins the command without delay.

(3) The feint may be made as a gesture merely by marching toward a possible crossing point and then changing direction under cover and marching the whole command to the point selected for the actual attempt at crossing. The feint may also be made by the use of chemical troops alone placing a smoke screen at some suitable point to indicate that combat troops may be crossing with its assistance.

b. The main attack.—(1) The crossing is made by fording, swimming, or ferrying by means of pontoons or other boats or rafts. It should be made on a broad front, with several troops or larger units abreast, each assigned a zone or point for crossing. The operation of crossing may take place wholly or in part under cover of darkness. Due to the confusion and disorganization incident to operating in the dark, it may be impracticable for a large force to cross before daylight. The most favorable time is such that the leading elements—that is, the covering detachments and the bridgehead troops—can arrive at the far bank just prior to daylight.

(2) The covering detachments cross first, dismounted. They avoid points which they believe to be covered by hostile machine guns, even if they have to select less favorable points. Once safely on the opposite shore they may work along the bank and outflank or eliminate hostile machine guns or other resistance at or near the river's edge which may be covering the more favorable crossings. The combat to secure these more favorable points should take place on the land, not from the water.

(3) Since the defender usually holds the river's edge lightly and depends upon centrally located reserves for resistance, the crossing, when once started, should continue as rapidly as possible. The bridgehead troops, usually dismounted, should cross after the covering detachments, generally in several waves. They push forward after landing and seize and occupy a bridgehead line. This line should be such as to prevent hostile machine guns from firing on the crossings and to deny hostile artillery observation if possible. Under the protection of the bridgehead, the remainder of the command crosses, bringing with them the led horses of the covering detachments and bridgehead troops.

c. Supporting troops.—(1) Artillery and chemical troops, if present, and all machine guns not crossing with the bridgehead troops, are placed where they can support the operation by fire, particularly during the initial phases of the attack. Usually fire is withheld until the crossing of troops is discovered by the enemy. The artillery supports the operation from its initial positions well forward, and is ferried across the river by echelon so as to maintain continuous fire. Machine guns are crossed by

echelon as soon as the bridgehead troops have gained their objectives.

(2) Chemical troops are of great value during the daylight phases of the crossing. A smoke screen placed on the defender's side of the river affords cover for the troops that are crossing and greatly reduces the effect of hostile machine-gun fire.

163. Continuation of the attack.—After the crossing of the river has been accomplished, and if still opposed by the enemy, an attack must be launched promptly. This is the best means of neutralizing the hostile counterattacks which may be made. The attack must not be piecemeal. It is executed in a manner similar to any cavalry attack, depending on the hostile dispositions.

164. Armored cars and scout cars.—Armored cars and scout cars are used to conduct reconnaissance for places where the river may be crossed by the attacking force. After the cavalry commander has decided upon the places to cross, armored cars and scout cars may be sent to continue or resume reconnaissance of the hostile forces. They cross the river by utilizing such bridges as may exist on the flanks of the opposing forces not protected by the enemy. They conduct reconnaissance to locate the hostile reserves and artillery.

MECHANIZED CAVALRY

165. Methods of attack.—Methods used by horse cavalry in the attack of a river line are applicable for mechanized cavalry. Usually mechanized cavalry will use its mobility to move to a point along the river front where bridges or fords exist which are held or defended by the enemy lightly or not at all. When opposed, it effects a crossing by attacking with fire combined with dismounted maneuver.

166. The crossing.—*a.* The machine-gun and rifle elements of a mechanized cavalry unit cross the river by swimming, by fording, or on rafts, under the protective fire of combat-car units, and establish a bridgehead.

b. Feints are made at several points by armored car platoons. The main effort is made where a bridge exists or where one can be constructed by attached engineers.

167. Supporting arms.—The cooperation of Air Corps, engineer, field artillery, and chemical units is necessary to insure the success of this mission.

SECTION V

PURSUIT

168. Object.—An energetic pursuit of a beaten enemy is the only means of obtaining a complete victory and decisive results. Campaigns are ended by the destruction of the hostile forces rather than by their mere defeat. Pursuit is initiated as soon as possible after it becomes apparent that the enemy is retreating. Every effort is made to gain and maintain contact with the enemy's main columns so as to accomplish his destruction.

169. Suitability of cavalry.—Because of its mobility, cavalry, both horse and mechanized, is well suited for pursuing a defeated or retreating enemy. This mobility enables the cavalry to reach positions on the hostile flanks and rear from which it can do the most damage to the retreating columns.

170. Forms of action.—*a.* The form of action employed by cavalry in pursuit may be either mounted or a combination of mounted and dismounted.

b. It may involve any form of cavalry action from the occupation and defense of a position in the direct path of hostile retreating columns to the mounted attack.

c. It may result in only one form of action or may include several different forms in succession or different forms of action by various elements of the pursuing command.

d. The form employed will be suited to the local terrain and the enemy situation at the time.

HORSE CAVALRY

171. General considerations.—*a.* Mastery over the enemy's cavalry in the operations preceding a pursuit or early in the pursuit greatly promotes a successful pursuit. If the enemy's cavalry is so inferior as to require the protection of its own infantry during the operations preceding pursuit, it may be considered that mastery over it has been gained.

b. The cavalry commander charged with determining the locations and routes of retreat of the hostile main columns keeps the higher commander constantly informed of the situation.

c. In pursuit, the cavalry commander may very properly extend the latitude of action of his subordinate commanders.

Under such circumstances he keeps his subordinates constantly informed of the situation and general plan of operations in order that they may act intelligently in carrying out the general plan.

d. When the victorious infantry is too exhausted or disorganized to pursue from the battlefield or when the enemy has outdistanced the infantry, the cavalry conducts the pursuit, including direct pressure when necessary. The proportion of the cavalry used for direct pressure should be small; the bulk of it should be launched in the encircling maneuver.

e. When the enemy is retiring in an orderly manner, repeated harassing attacks by fire are usual. After demoralization of the hostile forces has set in, mounted attacks become more and more frequent and through them maximum captures of men and matériel are obtained.

f. It is the duty of the cavalry to devote every man it possesses to the pursuit and to press it to the limit of endurance of men and animals.

g. The closest cooperation must exist between the cavalry and aviation. The aviation keeps the cavalry informed of the locations and movements of hostile forces. When the aviation has broken up the enemy's organizations by ground attack, their destruction is completed by the cavalry.

172. Conduct.—Pursuit usually takes the form of direct pressure against the retreating enemy, combined with an encircling maneuver against his flanks and rear.

a. Direct pressure.—Direct pressure is maintained by the troops already in contact and is merely a continuation of the main action characterized by the exercise of a high degree of initiative in all units of the command. There should be an aggressive general advance with the maximum employment of all available fire power. Halts for reorganization of the troops in direct pressure must not be the cause of losing contact with the retreating enemy. The cavalry attached to corps and divisions or cavalry detailed for that purpose and available local reserves are sent forward to maintain contact and to exert a constant pressure in order to prevent the enemy from forming his columns and starting an orderly retreat. The mobility of cavalry makes it especially valuable for outflanking enemy covering detachments or going through the gaps between them

to attack the main body in flank and rear. The cavalry of a flank infantry division or corps often may have considerable freedom of maneuver for turning movements against the enemy's covering forces or rear guards.

b. Encircling maneuver.—(1) While the direct pressure is taking place and at the earliest practicable moment after it has been decided definitely to pursue, all available cavalry, reinforced if practicable by infantry in trucks, and artillery are dispatched in the encircling maneuver.

(2) The mission of the force on the encircling maneuver is to check the retreating columns until they can be overtaken and destroyed by the troops which are following directly. The nearer to the heads of the retreating columns the encircling maneuver force strikes, the more effective will be the delay and the better the chance of destroying the whole hostile force.

(3) The march of the force engaged in the encircling maneuver is so conducted as to reduce to the minimum the possibility of interruption by hostile flank detachments and is directed at some point or area suitable to the launching of operations against the retreating forces. For example, a river line or strong defensive position across the enemy's line of retreat or defiles through which the enemy must pass may materially favor the operations. Hostile cavalry, when encountered, is attacked and dispersed or driven back; or, if this is impracticable, the hostile cavalry is contained by a detachment while the main body of the pursuing cavalry continues on its mission. Nothing is allowed to interfere with the rapid advance of the main body of the encircling force and its eventual success in cutting off the retreating enemy.

(4) The encircling maneuver may be initiated by launching the pursuing troops from a location well off on a flank of the field of battle or by launching them through a wide gap in the enemy's lines. In either case, the pursuing forces move rapidly and directly on their objective.

173. Machine guns and 37-mm guns.—Both light and heavy guns with the direct pressure are used as in attack. The guns with the encircling force are used as in defense or as in attack, depending on the type of action used by the encircling force. In both cases they must be used boldly and by direct fire. Caliber .50 machine guns and 37-mm guns are used principally

in their specialties, the former to fire on armored vehicles, the latter on enemy machine guns, but as the object of the pursuit is to disorganize the enemy, both types of gun in this operation may be used against any remunerative targets which present themselves.

174. Plans and orders.—*a.* Pursuit must be carefully planned and executed in order to be entirely successful.

b. When pursuit is foreseen by the commander of a force engaged in battle he formulates early plans, communicates them to his cavalry commander, and keeps him informed of any changes. The commander of the cavalry formulates and keeps up to date plans and orders for the cavalry pursuit. These plans must conform to the pursuit plans of the higher commander if known; otherwise they conform to the situation as known to the cavalry commander.

c. The commander of a cavalry force anticipating pursuit must be fully informed as to the terrain and the important tactical and strategical points on the enemy's probable lines of retreat and routes leading thereto.

175. Armored cars and scout cars.—*a. Use with encircling force.*—Armored cars and scout cars may be a part of the encircling force. The cars conduct reconnaissance to locate the heads of the retreating columns. They may reconnoiter to report the location, strength, disposition, and movement of any hostile forces that can interfere with the march of the encircling force. They may be directed to the hostile flank and rear to harass and delay hostile reorganization and withdrawal or they may be sent to critical terrain features, such as bridges and defiles, on the routes of the hostile retreat, to block hostile withdrawal. Armored cars and scout cars holding such key positions should be reinforced rapidly by more suitable ground-holding troops.

b. Use with direct pursuit.—Some armored cars and scout cars may be a part of the direct pursuit force. In this case they maintain contact with the rear guards of the retreating forces and conduct reconnaissance of the hostile flanks to gain information of the progress of the hostile retreat. They may harass the flanks to delay hostile reorganization and withdrawal.

MECHANIZED CAVALRY

176. General principles.—Mechanized cavalry in pursuit follows, in general, the principles applicable to horse cavalry.

177. Encircling force.—The action of mechanized cavalry is characterized by rapid movement on a wide encirclement to strike the heads of hostile retreating forces or their flanks on critical terrain features. The commander of the encircling force should employ armored car platoons to reconnoiter his advance, contain and delay hostile forces that may interfere with the mission of the encircling force, or to block critical points in the enemy rear.

178. Direct pursuit.—Some combat-car units may be retained by the commander to assist the advance of the direct pressure. They operate, as in the attack, on the flanks and endeavor to gain the rear of the enemy's covering force. Usually mechanized cavalry units will be employed in the direct pursuit when the retreating hostile force is composed of mechanized cavalry or motor convoy units.

SECTION VI

EXPLOITATION OF A BREAK-THROUGH

179. Definition.—A break-through is a penetration of the entire depth of a defensive system into unorganized areas in rear. The operation is only a means to an end; the end is the exploitation of the penetration and may be an operation against the flanks and rear of the defensive system that remain intact, against the hostile reserves in the open, or against the enemy's lines of communication and rear installations.

180. Methods.—*a.* The successful exploitation of a break-through consists in passing the exploiting forces through the gap and maintaining them thereafter so that they can carry out the missions assigned. This requires careful planning, forces strong enough to maintain themselves in the face of strong counterattacks by the enemy's reserves, and vigorous action against the flanks of the gaps. The enemy will spare no effort to crush the exploiting forces. The exploitation, although difficult to organize and execute, when well conceived and executed produces far-reaching and decisive results.

b. In assigning missions to the exploiting force, full use should be made of the mobility of horse and mechanized cavalry. At the earliest possible opportunity, it should be pushed well to the front and directed toward those important objectives which should be secured promptly or which lie deepest in the hostile territory. Under the security provided by the rapid advance of the cavalry, the infantry of the exploiting force can move forward at its maximum rate.

c. When assigning a mission to the cavalry, the higher commander furnishes its commander with complete information of the enemy, including the latter's expected reaction and the hostile forces that probably will be encountered. The cavalry commander is also informed of the part the assigned mission plays in the higher commander's plans. This is essential in order that the cavalry commander may take advantage of changes in the situation and when necessary change his plan to further the success of the whole.

d. The higher commander orders the cavalry forward or allows its commander to move upon his own initiative when certain prescribed conditions are fulfilled.

181. Plan.—The plan must be simple. It contains a general scheme and the necessary details for the accomplishment of the assigned mission. It should assign a definite mission to all the elements of the command and provide for—

a. Keeping the assembly of the exploiting force secret from the enemy.

b. Mutual support.

c. Passing rapidly through the gap, including the use of necessary guides.

d. Marching prepared for battle and quickly overcoming hostile resistance.

e. Thorough aerial and ground reconnaissance of the roads or paths through the gap, of the terrain over which the command will operate, and of the enemy. This usually makes necessary the use of reconnaissance detachments.

f. The security of the cavalry at all times. (The order of the higher commander usually provides that the attacking divisions mop up, in their zone of action, hostile detachments that might delay the cavalry during its advance through the gap.)

g. Marching rapidly upon the assigned objectives.

h. Keeping detachments to the minimum and retaining the major portion of the force under the immediate control of the cavalry commander.

i. Close liaison between all units of the command, with the aviation, and with following or adjoining forces.

j. The resources of the country and captured supplies are utilized to the utmost and form the chief source of replenishment for the cavalry. In addition, the army designates refilling points behind the enemy's present front line and undertakes to deliver supplies at those places.

182. Machine guns.—In the exploitation of a break-through, both light and heavy machine guns march well forward in the column, help drive off small enemy delaying forces, and are employed according to the principles of their use in attack when main enemy forces are encountered. Direct fire at suitable ranges is employed. Caliber .50 machine guns and 37-mm guns are used in their specialties and also against other targets if needed.

183. Support.—Infantry, artillery, and other forces may be attached to the cavalry. Infantry in trucks may follow closely to be used near the roads while the cavalry maneuvers against the flanks of hostile positions. Observation aviation should be attached while pursuit and attack aviation should protect and assist the cavalry.

184. Armored cars and scout cars.—Armored cars and scout cars are used for reconnaissance. They comb the road net and reconnoiter the terrain over which the command will operate in pushing through the gap. They conduct reconnaissance to locate the flanks of the gap and to locate and delay the movement of hostile reserves that can oppose the exploiting force.

SECTION VII

COMBINED ACTION

185. General principles.—*a.* A force composed of both horse and mechanized cavalry conforms, in general, to the principles applicable to horse cavalry. However, the two types of cavalry in such a command must be used in conjunction with, but not tied to, each other. One supplements rather than depends on the other.

b. A careful consideration of terrain is important. The horse cavalry should operate in general over the areas unsuited for the mechanized cavalry, while the latter seeks terrain that will permit full use of its mobility.

186. Maneuver attack.—This will be the usual form of attack employed. The horse cavalry may be used as the secondary attack and the mechanized cavalry as the maneuvering force. Advantage may be taken of the great mobility of the mechanized cavalry by having it execute a wide turning movement and attack the hostile flank or rear in conjunction with an attack by the horse cavalry. In such a case the attack of the horse cavalry may be made with a secondary attack and maneuvering force of its own. The mission of the mechanized cavalry should be to strike the enemy in some vital area or locality the loss of which would jeopardize the hostile operations.

187. Penetration.—In a penetration involving a dismounted attack, the horse cavalry ordinarily should be used for the rupture of the hostile position while the mechanized cavalry is held in reserve prepared to exploit the success. The value of the mechanized cavalry for this purpose is so great that it should not be expended unnecessarily in the main attack. However, this form of attack will be unusual for cavalry. Should the attack by the whole force be made mounted, the mechanized cavalry may lead, followed closely by the horse cavalry.

188. Exploitation of a break-through.—In the exploitation of a break-through, the horse and mechanized elements of a command may operate in conjunction with each other or on separate missions. Should the enemy have large formed reserves which are moving toward the point of break-through, it may be advisable for the cavalry commander to keep his horse and mechanized cavalry concentrated sufficiently to make a coordinated or combined attack against such reserves. However, if the situation permits, the mobility of the mechanized cavalry should be used to permit it to execute missions against hostile installations deep in the enemy rear areas. The horse cavalry should operate against troops, command posts, or other objectives at less depth in rear of the gap. Both or either horse or mechanized cavalry may be used to assist in rolling up the enemy flanks exposed by the break-through in order to widen the gap.

189. Pursuit.—In pursuit, the mechanized cavalry will be most useful in the distant encircling pursuit while the horse cavalry executes the less distant encircling pursuit or the direct pressure. The mechanized cavalry may be able to delay the heads of retreating columns until the arrival of the horse cavalry.

190. Attack against a river line.—Should it become necessary to force a crossing over a river, the initial crossing and establishment of a bridgehead must be executed by the horse cavalry. If there is no bridge at any point on the river, the mechanized cavalry can assist by fire and smoke while the bulk of it is held in reserve pending the construction of a bridge. However, a wide reconnaissance should be made along the entire river for some bridge that the mechanized cavalry can use. Unless the mission, the situation, or other considerations prevent, the mechanized cavalry should utilize its mobility to make a wide detour, if necessary, and cross on any bridge that may be found practicable. It should then move on the flank or rear of the enemy opposing the horse cavalry and assist the crossing of the latter.

CHAPTER 5

DEFENSIVE COMBAT

SECTION I

GENERAL

191. Defensive operations.—Defensive operations have one or more of the following purposes :

a. To hold the enemy in check while our own forces are being concentrated and prepared for action.

b. To economize troops in order that as large a force as possible may be held out for the decisive blow.

c. To hold a position until the arrival of infantry and other forces.

d. To deny the enemy an important locality or area.

e. To cover the withdrawal of infantry and other forces.

192. Measures employed.—The defense employs counter-measures to meet those employed by the attack. They include—

a. Deciding on the form and class of defense.

b. Locating and maintaining contact with the hostile forces by reconnaissance elements.

c. Selecting, occupying, and organizing favorable positions for defense.

d. Developing and delaying the hostile advance or attack by use of security elements.

e. Repulsing the hostile attack.

f. Arresting and confining penetrations or envelopments.

g. Expelling penetrations or repulsing envelopments by counter-attack.

h. Launching a counteroffensive.

193. General distribution of troops.—A force in defense is usually arranged in order from front to rear as follows :

a. Outpost forces.—These forces, located in the outpost area, consist of observation and security detachments for the force as a whole.

b. Holding forces.—The holding forces are located in the zone of principal resistance. They develop, delay, and repulse at-

tacks. Their deployment consists of such combat outposts as are necessary for the local security of the immediate front and flanks, a firing line, local supports, and reserves.

c. General reserve.—The general reserve consists of units designated as such by the commander of the entire force. It may protect the flanks of the holding forces. If necessary, it assists the holding forces in limiting or confining penetrations and envelopments. Its most important function is to carry out counterattacks or initiate the counteroffensive. Its strength is conserved for this function.

d. Covering force.—If the situation permits, a covering force is located in advance of the outpost area. The purpose of the covering force is to maintain contact with the enemy and secure the time necessary for the deployment of the main body and the organization of the ground. This is accomplished by delaying action on the main roads and routes of advance. When withdrawn, it usually forms part of the general reserve.

194. Battle position.—The battle position of any defensive system is that position upon which the main defense rests. It contains the main line of resistance which position serves as the base or reference line to regulate the location of all the elements of the defensive system. Tactical localities organized for defense are selected so as to take advantage of natural and artificial features of the terrain and for mutual support and cooperation in defense.

195. Means employed.—The means employed in defensive combat include the following:

a. Observation, concealment, and cover.

b. Use of the natural and artificial features of the terrain, especially observation, fields of fire, and obstacles.

c. Full and effective employment of movement and coordinated fire power.

d. Keeping the enemy in doubt as to the character of the resistance which he may encounter and of the location of the position on which the principal defense effort is to be made.

e. Counterattack or counteroffensive.

196. Classification.—Defensive combat with respect to general employment of troops may be classified as follows:

a. Active defense.—The defense seeks to gain a tactical victory by temporarily developing and containing the enemy and

then striking a decisive blow by launching a counteroffensive. This is the class most frequently used by cavalry.

b. Passive defense.—The defense seeks to hold a specified area, position, or front against hostile attacks with no intention of employing a decisive counteroffensive to gain a decision.

197. Forms of defense.—The plan of defense with respect to disposition of troops and organization of ground falls into one of the following forms: deployed defense, position defense, or zone defense.

a. Deployed defense.—This form of defense is employed in situations where it is necessary to pass to the defensive quickly in order to oppose impending offensive action on the part of the enemy. Such situations arise in meeting engagements, delaying actions, and when offensive operations have been stopped by the enemy's resistance. It is an emergency measure; the terrain actually occupied is utilized to the best advantage; and preparations for defense are limited to the construction of small, individual trenches, and hasty arrangements for coordinated fire and shock action, mutual support, and cooperation. This is the form of defense most frequently used by cavalry, especially in delaying operations.

b. Position defense.—The position defense is the form of defense in which there is one well-organized battle position on which the primary defense is conducted. It is employed when the defender has time before meeting the attack to select a suitable position, occupy it, and organize the ground deliberately for defense. It is seldom used by cavalry.

c. Zone defense.—The zone defense is a form of defense which provides for defensive combat in considerable depth. With this object in view, a number of successive battle positions are selected and combined into a defensive zone. This form of defense is rarely adopted by cavalry and then only dismounted as a part of a larger force in a stabilized situation.

198. Selection of defensive positions.—The mission and the situation generally impose more or less definite limitations in respect to the locality where resistance may be offered but, within the latitude fixed by these limitations, the commander selects the area that affords the defending forces opportunity to deliver combat under the most favorable conditions. When confronted by a threat of mechanization, attention should be

paid to the selection of terrain that is unfavorable to the operations of mechanized elements.

199. Influence of the terrain.—The terrain factors which exercise the greatest influence on the selection of the position to be defended and the location of its forward limits are—

a. Observation.—Facilities for observation for command and fire control purposes, especially for the artillery, are important. The battle should take place well in front of the dominating terrain which furnishes the observation.

b. Fields of fire.—There should be good fields of fire at short and mid ranges, especially for machine guns.

c. Cover.—Cover should be available for the defender either in woods, towns, or behind ridges, and maximum use of it must be made by all units, individuals, and machine guns.

d. Obstacles.—Natural obstacles, such as unfordable streams, mountains, swamps, and lakes must be used to the maximum. There is a great deal of defensive strength in towns and woods.

e. Routes of communication.—Roads or trails, both to the front and laterally, should be available for the defender. They favor the prompt movement of supply and evacuation facilities and also the secret movement of reserves.

200. Defensive fires.—The commander must coordinate the fires of his artillery, his small arms, and his supporting weapons. This system of mutually supporting defensive fires is so arranged as to provide—

a. A distant area covered by artillery fire alone.

b. An area covered by the combined fire of artillery and small arms.

c. An area close in front of the main line of resistance covered by small arms fire alone.

d. Arrangements for the continued employment of artillery and small arms within the battle position, in case any part of it is occupied by the enemy.

SECTION II

HORSE CAVALRY

201. General considerations.—*a.* In defensive or delaying operations which seek to gain time rather than a decision, the mobility and fire power of cavalry are of special value.

b. Deployment is made in groups with comparatively wide and varying intervals, so disposed as to take maximum advantage of the terrain with due regard to mutual fire support.

c. Organization of the ground usually is limited to demolitions and the construction of obstacles, rifle pits, and machine-gun emplacements.

d. All machine guns are placed in position to support the defense. They are distributed in depth if a determined resistance is contemplated. When a determined resistance is not contemplated, the bulk of the machine-gun strength is placed well forward so as to permit the maximum fire effect at the opening of the engagement.

202. Dispositions.—Cavalry seeks a position which affords cover and concealment for led horses and which favors a counteroffensive by mounted reserves.

a. Active defense.—(1) Against infantry with little or no cavalry attached, cavalry is deployed on a comparatively wide front in mutually supporting groups with local reserves and a mobile general reserve held under cover to the rear or escheled to the flank and rear. Those parts of the firing line that have a good field of fire may be lightly held. There will be little depth to the defense but lack of depth is partially compensated for by the speed with which threatened parts of the line can be reinforced.

(2) If the enemy's force contains a large proportion of cavalry, consists entirely of cavalry, or includes a substantial mechanized force, the reserve must be relatively large and always mobile.

b. Passive defense.—The dispositions of a large cavalry force engaged in passive defense differ from those adopted for an active defense generally in the following respects:

(1) The position is organized in greater depth.

(2) Troops engaged on the battle position are less mobile.

(3) The general reserve, while usually held ready for mounted action, may be smaller. However, if the enemy's force is strong in cavalry, the general reserve should be large and it must be mobile.

(4) Led horses are held well in rear of the main line of resistance.

203. Reconnaissance.—Reconnaissance is maintained for the purpose of determining the time and place of the hostile main attack.

204. Security.—Early contact is made with the hostile forces by means of our reconnaissance agencies. Contact once made is maintained. General security is furnished by means of covering forces, outposts, and forces detailed to protect the flanks and rear. Each unit furnishes its own local security. Every means must be taken to secure the command against aerial attacks.

205. Frontages.—*a.* The extent of front should be small enough to be held securely by the troops available and allow for the proper strength of the local and general reserves. It should be great enough to avoid congestion, consequent losses, and easy envelopment by the enemy.

b. The strong features of a position are, in general, those parts in front of which the hostile approach is exposed to observation and fire for a long distance. The weak features of a defensive position are those which permit the attacking forces to approach under cover within close range. The latter require garrisons of sufficient strength immediately at hand to meet the hostile forces in close-range combat. Narrow frontages are assigned on the weaker positions of the front and broad frontages on the stronger positions.

206. Sectors.—*a.* In organization of the ground for defensive combat, the front is divided into sectors, to each of which is assigned a tactical unit for occupation, organization, and defense. In order to designate the area to be occupied, the lateral limits are fixed by sector boundaries, the front line by limiting points on the main line of resistance, and the rear limits by rear boundaries or reserve lines. When a force is operating alone, exterior boundaries are not usually designated. A sector or area is identified by the designation of the unit actually occupying it.

b. Lateral boundaries of sectors are extended to the front to the maximum range of the weapons of the unit occupying the sector. Sector boundaries extend far enough to the rear to include the reserves of the unit concerned or to the rear limits of the sector. Important tactical localities such as hills, woods, or villages should be included in the sector of a single unit.

Sector boundaries should follow features easily distinguishable on the terrain.

207. Organization of a position.—In general, a unit should organize a sector as follows:

a. Subordinate units are assigned sectors.

b. Within a sector, tactical units are deployed in width and depth upon terrain features possessing defensive qualities.

c. Units are deployed at varying intervals along the general line to be held. The width of the intervals will depend upon the requirement that the intervening ground can be covered by fire.

d. Depth is obtained by disposing supports and reserves at varying distances behind the front line, upon important terrain features. Each unit the size of a troop or larger, and a platoon when acting alone, should hold out a support or reserve. The distance of the supports or reserves behind the front line depends upon the size of the unit supported and the principal mission of the support or reserve. Each unit behind the front line must support the more advanced units by covering the intervals and flanks with fire, by reinforcing front line units, by counter-attacking to drive out hostile penetrations or envelopments and by supporting counterattacks. They should not be so close to the front line as to come under fire directed at more advanced elements, or be involved in case hostile troops overrun forward positions. They should not be so distant as to find it impossible to launch a coordinated counterattack anywhere within the sector within the time needed.

e. Local supports or reserves should generally be dismounted. The larger reserves as a rule retain their horses in order to adopt mounted operations promptly.

f. Led horses should be held mobile close behind their units. They should be concealed from both ground and aerial observation and should be protected from the fire of ground weapons, aerial attack, and flank attacks.

208. The squadron in defense.—*a. Basis.*—The basis of defense of a position is the squadron occupying a squadron area.

b. The squadron as part of the regiment.—As part of a larger force, the squadron is generally assigned a sector or area in which it organizes troop areas capable of mutual support. Any local outposts furnished by the squadron should come from the elements in squadron reserve.

c. The squadron alone.—The squadron alone should not resort to the passive defense except in accordance with its mission. It should retain a mobile reserve.

209. The regiment in defense.—*a. The regiment as a part of a larger force.*—When part of a larger force, the regiment is generally given a sector or area for defense in which it organizes squadron areas.

b. The regiment alone.—Depending upon tactical considerations, a regiment may deploy with one or more squadrons in the forward area. Normally the reserve remains mobile. The reserve is employed either to outpost the front of the position, to protect the flanks and rear, to attack the enemy while still at a distance or while he is attacking the dismounted elements, or to counterattack enemy forces which may have penetrated the line of resistance.

210. Heavy machine guns.—*a.* Heavy machine guns form the framework of the defense, both active and passive. All or most of them are used in the holding forces. The bulk of the guns in the main position are placed so as to fire on likely avenues of enemy approach (sector fire) and to place final protective lines (bands of fire, each 800 yards long) in front of the main line of resistance. These are called forward guns. Other guns may be placed farther to the rear primarily to prevent complete penetration of the position and to support counterattacks. These are called rear guns. In an active or a deployed defense, especially of small units, rear guns are usually omitted.

b. Normally no guns are held in reserve but all are placed in firing positions.

c. The heavy machine guns of a regiment when retained under regimental control are placed by the machine-gun troop commander in accordance with the orders of the regimental commander. While they may be sited in squadron areas, they are not usually attached to squadrons nor smaller rifle units. Adjustment between the positions of rifles, light machine guns, and heavy machine guns is necessary. The heavy machine guns must be given the best positions available.

d. A hill is defended by placing heavy machine guns on its shoulders or flanks rather than on its summit; a ravine, by placing guns at its head and on one or both sides so as to

sweep its sides with fire; a ridge, by diagonal fire across its face or along its crest. In general, the direction of fire parallels the contours. A wood or village is defended by flanking fire across its front, sides, and rear, from guns placed inside and on the flanks and rear of the wood or village; and a stream, by fire on likely crossing places and on likely approaches to the farther bank.

e. When the enemy attacks, forward guns open fire first on remunerative targets in their sectors and close with the attack until their fire is laid on their final protective lines, where it remains. Rear guns fire in front of the position and on units penetrating or outflanking the position. If the attack breaks down, guns pursue by fire. If it succeeds, guns either hold out until captured or withdraw upon orders from higher authority.

211. Light machine guns.—*a.* Light machine guns may be used in outposts or with combat patrols and other small units, but the bulk of them are used on the battle position.

b. On the battle position when heavy machine guns are present, all or part of the light machine guns may be used to complete or augment the sector fire and final protective lines. When heavy machine guns are not present the light machine guns take over the heavy machine-gun missions.

c. Coordination of their fire with that of the heavy machine guns is obtained by consultation and agreement between the machine-gun troop commander and the commanders of the rifle units concerned, supervised by the regimental commander or his representative. The light machine guns may be retained under the direct control of the rifle troop commander and placed at his direction, or he may attach all or part of them to his rifle platoons. The rifle platoon commander will usually place the light machine guns to the best advantage in his combat group.

d. Front-line guns should have sector missions in which they fire on targets of opportunity within their sectors and also final protective line missions. Light machine guns are sited for direct fire. They may be sited singly or in pairs. Light machine guns are useful for night firing and should be so used. They should have alternate positions. All guns are given fire missions, even those with support and reserve units,

though the latter do not usually fire in front of the main line of resistance except in particularly favorable conditions of terrain.

212. Antimechanization weapons.—Caliber .50 machine guns are sited in defense principally for missions of antimechanization. If there is a particularly favorable avenue of approach for mechanization from the front, some guns may be placed in or near the front line to cover it. If not, the bulk of the guns should be placed well out toward either flank and in rear of the firing line, with local protection provided. If no enemy mechanization is present, they may be used as antimachine-gun weapons. The guns should be sited for direct fire.

213. 37-mm guns.—These guns are placed in defense on high ground in rear of the front line for fire on enemy machine guns. Their usual location is in the area in rear of the support line and in front of the regimental reserve, so that they may fire in front of the front line. They may use indirect fire, usually overhead, although direct fire is preferable if concealment can be obtained. They may be employed in battery, but more often are separated as individual guns. They should have alternate positions selected to which they may move if located or if they are drawing fire on adjacent rifle units. They may be used as antitank weapons.

214. Armored cars and scout cars.—*a.* Armored cars and scout cars are used to conduct reconnaissance. Before contact is gained they are sent to locate and maintain contact with the advancing hostile forces. They may be attached to the covering force. They may delay the hostile advance by harassing action against the front and flanks of the enemy.

b. As contact between the defending and attacking forces is gained, armored cars and scout cars withdraw to the flanks and continue reconnaissance of the hostile flanks and rear to gain early information of the location and movement of hostile reserves.

c. They may delay hostile envelopments by harassing actions.

215. Field artillery.—*a.* Prior to the hostile attack, a part of the artillery, under centralized control, is used to hamper and delay the enemy and, if necessary, support the security forces. For these missions some of the artillery may employ temporary forward positions. During this phase of the defense,

it is advisable usually to withhold the fire of a part of the artillery so as to insure its concealment. Immediately preceding the hostile attack, a counterpreparation is often fired, all artillery weapons participating. During the hostile attack, the artillery supports the defense with all available batteries.

b. The fire of the artillery is massed against the hostile main attack. This massing is secured through the assignment of normal and contingent support missions to the artillery in a manner enabling the artillery to utilize its characteristic of flexibility of fire (variations in range and direction of fire from a given position). If the area in which the enemy will make his main attack has not been determined, it may be necessary to prepare one or more alternative plans for the employment of the artillery and subsequently adopt a plan most suited to block the method of attack used by the enemy. These alternative plans may involve the shifting of artillery positions, changing support missions, and emplacing artillery units which were held initially either in a position of readiness or in reserve.

c. Close liaison must be established and maintained between the artillery and the cavalry.

216. Engineers.—Engineers assist in the work of organization of the ground by supplying tools and materials. They execute special works such as observation posts, command posts, and aid stations; prepare land mines, road blocks, inundations, and other obstacles against tanks and mechanized vehicles; manufacture and erect camouflage. Demolitions and the blocking of roads may be required for protecting a flank and closing avenues of approach. The bulk of the engineers is usually employed in the repair, maintenance, or construction of routes required for movement and supply, especially roads and bridges. Combat engineers are available for use in emergency as fighting units. In preparing for a main counteroffensive, the duties of the engineers are the same as in the attack.

217. Chemicals in defense.—*a.* In active defense, the use of chemicals will be the exception, and when employed will be confined to smoke and nonpersistent agents.

b. In passive defense, smoke and both persistent and non-persistent agents may be used.

c. Persistent agents must be employed with caution. Areas thus affected must be limited to those over which the defender's forces will not pass.

218. Trains.—Trains are held well to the rear, in bivouac or on side roads, in order to keep the main roads clear for the movement of combat elements.

SECTION III

MECHANIZED CAVALRY

219. Characteristics.—The characteristics of mechanized cavalry are particularly adapted to active defense as distinguished from passive defense.

a. *Active defense.*—(1) Normally an active defense by a mechanized cavalry regiment may be conducted by employing one troop or squadron supported by machine-gun and mortar elements to develop or contain the enemy while the remainder of the regiment is held in reserve. The strength of the defense lies in the machine-gun disposition and in the power of the counterattack by the local and general reserves. In this manner, the characteristics of the combat car are best utilized in the defense. Machine guns are disposed on a wide front with depth, but mutually supporting, in order to facilitate the support of counterattacks made by mechanized elements, either through the hostile lines or by envelopment of them.

(2) Reorganization of mechanized elements used in the counterattack is made under cover of machine-gun fire.

b. *Passive defense.*—Mechanized cavalry should seldom be given the mission of passive defense, but in case this is done, the combat vehicles may be advantageously disposed in positions which afford them turret defilade. The ground machine guns are used as the framework of the defensive action. Advantage is taken of natural and artificial obstacles.

c. *Conduct of the defense.*—(1) In any type of action it is highly important to obtain early and accurate information of the enemy. This requires early and effective reconnaissance by reconnaissance elements.

(2) Small mechanized elements are placed well forward to break up and delay the hostile advance.

(3) The main line of resistance is supported by mortar and machine-gun fire.

(4) Unless the situation requires a passive defense, once the hostile formed bodies have been located and are within reach, the entire force or part thereof is launched in an offensive against the hostile body.

(5) When counterattacks are anticipated, the terrain involved will be given a thorough preliminary reconnaissance.

(6) If the hostile force includes mechanization, every advantage is taken of terrain to provide protection on all sides. An active antitank gun is the best defense against a hostile mechanized force. When a position is to be defended against hostile mechanization, every advantage is taken of obstacles which can be used to protect the flanks and restrict the direction and scope of the hostile attack. The position should afford the defender concealment and opportunity for surprise in the counterattack. It should also provide depth and room for maneuver by the defending force.

(7) Organization for defensive action follows the form of wide and deep deployment of mutually supporting combat groups, each disposed to take full advantage of obstacles. Such organization, however, must not become too fixed since the mobility of mechanized cavalry may normally be expected to be used in wide movements over an extended area, thus rendering useless a too rigid defense.

SECTION IV

COUNTERATTACK AND COUNTEROFFENSIVE

220. Definitions.—*a.* A counterattack is a limited objective attack launched by a part of a force on the defensive against a hostile attacking force or element for the purpose of regaining portions of the defensive system or of relieving the holding forces of the defense from the pressure of the attacking force. The general attitude of the force which delivers it is still defensive.

b. A counteroffensive is a change from defensive to offensive operations by the entire force. When a counterattack is succeeding and the situation warrants the commander may order a counteroffensive.

221. Penetrations.—Should the enemy succeed in penetrating a defensive position, the shoulders of the penetration must be held. When necessary they are strengthened by fire or reinforcements. This limits the width of the penetration and exposes the flanks of the enemy forces that have broken through. Hostile advance is stopped by fire from troops placed in front of the advancing enemy. He is then ejected by counterattack, preferably delivered against the flank or flanks of the penetration and as close to the base of the penetration as feasible.

222. Counteroffensive.—A counteroffensive is launched for the purpose of regaining the initiative, of gaining a tactical decision, or a strategic advantage. The termination of a defensive attitude and the passage to the offensive is usually due to a marked change in relative combat strength, in the disposition of the opposing forces, or in the situation.

SECTION V

DEFENSE AGAINST MECHANIZATION

223. Terrain.—Mechanized vehicles are restricted to terrain which permits their movement and is suitable for their employment. Roads may be interdicted at bridges or other defiles. Few vehicles are amphibious and any body of water more than 3 feet in depth is an impassable obstacle. Mechanized formations can move across country at effective tactical speed only when the ground is fairly smooth and open. Should the ground be very rough, marshy, heavily wooded, thickly boulder-strewn, mountainous, or extensively cut up by deep water courses, irrigation canals, drainage ditches, or bayous, mechanized formations may be unable to move effectively. In view of the sensitiveness of mechanization to terrain, full advantage should be taken of the terrain in considering a defense against hostile mechanization.

224. Information.—*a.* Continuous effort must be made to detect the presence of any hostile mechanized unit within striking distance and to determine its composition, strength, and, if advancing, its direction and rate of advance. This information must be procured, transmitted, and disseminated in time to permit defensive measures to be taken before the hostile mechanized unit can close and attack.

b. Observation aviation furnishes a means of securing information. An adequate complement of observation planes should serve every separate force.

c. Aerial reconnaissance should be supplemented by ground reconnaissance conducted by fast vehicles equipped with radio.

d. In friendly territory, commercial telephone and telegraph systems and radio broadcasting stations may be utilized to furnish information.

e. Radio intercept and direction-finding instruments may be valuable in detecting the advance of hostile mechanized units.

f. Small cavalry forces may utilize mounted troopers and motorcyclists with a prearranged code of visual signals to give warning of the approach of hostile mechanization.

g. If the means for procuring information are inadequate or fail to function, additional reliance must be placed upon suitable defensive formations and constant readiness for action.

225. Security.—*a. General considerations.*—(1) In mobile situations, security must include considerations of the speed and strategic mobility of hostile mechanized formations. Every separate command must consider the necessity for all-around protection.

(2) Reconnaissance should extend well beyond other security detachments.

(3) Under all circumstances the antimechanization weapons of a command must be disposed in width and depth so that they may be interposed promptly between the hostile mechanization and the elements being defended.

(4) Pyrotechnics, radio, fast motors or other rapid means should be furnished security detachments for communication with the main body.

(5) The principal security detachments should be reinforced with a portion of the antimechanization weapons of the command.

(6) Hostile mechanization may force horse cavalry or infantry to use approach march formations even when not moving to the attack; it may be necessary to make long distances with the command largely disposed for action.

(7) Horse cavalry must become accustomed to formations or dispositions which will effectively lend themselves simultaneously to defense against a surprise attack by hostile mechaniza-

tion; combating enemy horse cavalry; continuing to advance at a good rate of march. While available roads will be used, it may be expected that much of a large command must move across country on occasion, with the formation extended in width and with vulnerable elements, such as combat trains and headquarters groups, moving in protected central positions.

b. Night marches.—Horse cavalry may accomplish much of its marching in campaign at night thus rendering itself less vulnerable to attack by hostile mechanization.

c. In position or bivouac.—Antimechanization weapons should be distributed in accordance with probable lines of approach of hostile mechanized units and kept in readiness for immediate action. Trains, headquarters groups, and administrative establishments should seek locations or areas offering protection from mechanized attacks just as they seek overhead cover from aerial attack.

SECTION VI

DEFENSE OF A LOCALITY

HORSE CAVALRY

226. General.—Occasionally small independent commands are called upon to garrison or guard isolated localities, such as villages, ranches, or bridges, and at the same time be prepared to defend the locality against attack, frequently by superior numbers of irregular troops. The absence of daily contact with the enemy and the lack of definite information of the enemy increase the danger of surprise. Nonmilitary or routine duties that are required of the command may cause it to be scattered or place it at a disadvantage in uniting to meet a sudden attack unless precautions peculiar to such situations are taken. The military aspect of defense is complicated further by the presence of noncombatants and the extent of property to be guarded. In such a situation an intelligence officer is detailed and furnished with the necessary personnel and means for carrying out his work. This officer must cooperate with the civil authorities of the locality and utilize every opportunity for obtaining information. He must make the acquaintance of and keep in close touch with such responsible civilians as by nature of their pursuits or acquaintances are most apt to furnish reliable infor-

mation. Close touch is kept with the enemy situation. Reports or rumors that cannot be verified are assumed to be true and the command kept on the alert while investigation is made.

227. Plan of defense.—A plan of defense is prepared and the command trained in carrying it out. This plan includes the security measures to be maintained, the kind of defenses to be prepared, designation of troops to occupy each prepared position, routes to be taken to such positions if not occupied at all times, designation of the reserve, designation of assembly points, communications to be installed and employed, disposal of horses, disposal of noncombatants, clearing of streets, and such other considerations as the situation requires.

228. Dispositions.—*a.* The general scheme of deployment conforms to the principles of an active defense. It is characterized by little depth, extension of front, volume of fire, and an aggressive attitude.

b. Intrenchments suited to the size of the command and the nature of the locality to be guarded are prepared. In the case of a village, simple field works are usually sufficient if suitable for occupation by a group of appropriate size and located in salients to afford mutual support. Upon the completion of these works they should be occupied temporarily by the troops assigned to them. Firing data should be prepared so that night firing can be employed without danger of firing into friendly troops. Small units in observation occupy these works. When the alarm is given, they are occupied by assigned troops at once. Ground intervening between intrenchments is covered by obstacles or by fire.

c. A reserve is provided for and a place of assembly designated for it in case of an alarm. The reserve must be familiar with the location of the intrenchments, the routes thereto, and the method of covering ground intervening between intrenchments. If combat cars are present they are placed in reserve. When the enemy attacks, combat cars are used in the counter-attack.

229. Reconnaissance.—Day and night patrolling at a distance at irregular times and by varying routes is employed against surprise attacks. Distant patrols are provided with means of signaling an enemy advance. Telephones are used where practicable, but sole reliance is not placed on them. If armored

cars and scout cars are present they conduct the distant reconnaissance. They are sent over all possible routes of hostile approach to gain and maintain contact with the enemy. They may be used to harass and delay the hostile forces.

230. Communication.—Sometimes considerable dispersion of a command is required in its mission. Communication between the dispersed elements is of prime importance. All available means of communication are employed. Additional telephone wire and instruments are promptly established. Arrangements are made with the local telephone company for use of all civilian telephones. A list of civilians owning automobiles and motorcycles is made. Full use is made of pyrotechnics. If sufficient armored cars and scout cars are available they can be used for communication purposes between widely dispersed elements.

MECHANIZED CAVALRY

231. Plan of defense.—*a.* Mechanized cavalry may be required to defend and hold a locality until relieved by other troops.

b. The administrative arrangements made with civil authorities and the general plan for defense prescribed for horse cavalry units are applicable to mechanized cavalry.

SECTION VII

DELAYING ACTION

HORSE CAVALRY

232. General principles.—Delaying action is that class of defense by which a command endeavors to check a hostile advance or attack and thus gain time. The delaying force avoids decisive combat. It usually withdraws before suffering serious losses unless its mission requires more determined resistance. The maximum amount of time is gained by forcing the enemy to reconnoiter, maneuver, and deploy. In accomplishing its mission of delay, a command endeavors to prevent the enemy from driving home his attack.

233. Suitability of cavalry.—Cavalry is well suited for delaying action as its mobility and fire power enable it to employ a variety of methods to accomplish delay.

234. Employment.—Cavalry may delay as—

- a. Covering forces in advance or in rear of other troops.
- b. Advance, flank, or rear guards and security detachments.
- c. Forces covering withdrawals.
- d. Main cavalry forces pending a favorable opportunity for offensive action.
- e. Detachments covering the flanks of battle or delaying the arrival of hostile reinforcements.

235. Classes.—Delaying actions in which cavalry may participate are of three classes:

- a. When the delaying force must hold its position at all costs for the time indicated by its mission. This contemplates effecting the necessary delay in a single position.
- b. When the enemy is delayed as long as possible without imperiling the safe withdrawal of the delaying force. The utilization of successive positions is usually employed in this class of delaying action.
- c. When the delaying force elects to attack in order to secure the necessary delay.

236. Single position.—a. Some of the factors which favor a decision to delay in a single position are when—

(1) The terrain is not well suited to delaying action in successive positions.

(2) The requisite delay is so short that it can be secured in a single position without seriously engaging the delaying troops.

(3) The area of operation is limited and a withdrawal to a second position does not permit the accomplishment of the mission.

(4) There is a choice between a single strong position with secure flanks and a succession of weaker positions.

b. Delaying action in a single position becomes passive defense during the period of necessary delay and its characteristics are similar to those of a passive defense.

237. Successive positions.—A delaying action in successive positions consists of a series of coordinated withdrawals. Factors favoring a delay in successive positions are: losses are usually fewer than in delaying action in one position; there is a better chance to avoid becoming seriously engaged than there is in a single position.

a. Selection of positions.—(1) Should the mission so indicate, the commander will select an axis of delay which will be the guiding direction of his future actions. He may be forced, either by the enemy or the terrain, to leave this axis temporarily but he will constantly endeavor to return to it. Successive positions on ridges are selected along this general axis upon which all or the major portion of the force is disposed, with the object of causing the enemy to deploy his entire command for a coordinated attack. Depending on the length of time they are to be held, positions are organized as completely as the time available permits. Between these positions, small groups with machine guns assist in the withdrawal from one position and in the occupation of the next one in rear.

(2) Good observation coupled with a good field of fire at long and mid ranges, up to 2,000 yards, is desirable. Fire at long and mid ranges causes early and wide deployments by the enemy. The positions should be such that the enemy must attack them, consume a long time in turning them, or abandon his mission. The flanks must be strong to avoid being easily turned. Every use is made of natural and artificial obstacles. Cover for led animals, close to the firing line, should be available. Each position should favor rapid withdrawal under cover.

b. Reconnaissance.—Cavalry maintains contact with the enemy by all means available; horse cavalry patrols, armored cars, scout cars, and aviation. Wide reconnaissance to the flanks is necessary to locate hostile enveloping and turning movements and to seek opportunities for flank attack.

c. Disposition of command.—(1) Groups are disposed on the delaying position on a relatively wide front so as to cover avenues of hostile approach by fire. If stubborn resistance is to be made, these groups are within supporting distance of each other and are able to sweep intervening ground with fire. Echelonment in depth facilitates withdrawal.

(2) An adequate part of a delaying force must be retained along the axis of delay, between the enemy and the troops or positions being covered. Large bodies of troops may be assigned zones or may be simultaneously deployed on two successive positions. Smaller delaying forces deploy the major part of the force on one position holding out sufficient reserves to

meet expected developments. A force may be split into two or more semi-independent forces to delay the head of the hostile forces and at the same time attack the flanks.

d. Distances.—The distance between successive positions is variable. For small forces the distance may be short. For larger forces, supported by artillery, the distance should be such as to permit light artillery in rear of the second position to assist in covering the withdrawal from the first position and at the same time necessitate a forward displacement of the enemy's light artillery before his attack of each position.

e. Communication.—In order to enable the commander to meet changes in the situation, information must reach him promptly and his orders must be quickly transmitted. This necessitates communication by the most rapid means available.

f. Coordination.—The commander coordinates the action. He has a reconnaissance made of possible delaying positions in rear, and routes thereto. By personal observation and by adequate communication he maintains touch with and controls the action. The designation of at least two delaying positions facilitates coordination and control.

g. Trains.—Cavalry in delaying action disposes its trains so as to serve the troops without interfering with their withdrawal. This usually requires that at least a part of the ammunition carrying and evacuation elements be near the troops while the remainder together with the class I supply elements should be farther removed.

h. Led horses.—Generally, led horses are kept mobile and under cover. The nearer the led horses are kept to the firing line, the longer the fire can be continued and the moment of withdrawal delayed. When operating against cavalry, it may be necessary to provide a special guard for led horses.

i. Reserves.—When the command is to be withdrawn before the enemy drives home his attack, only small reserves need be held out. The most probable use of the reserves is to cover the withdrawal. They should, therefore, be posted well to the rear and somewhat to a flank.

j. Withdrawals.—Withdrawals must be anticipated and carefully planned. They are ordered by the superior commander. The mobility of cavalry enables it to withdraw quickly.

238. Against less mobile enemy.—*a.* In this type of action, the delaying force avoids decisive engagements. It delays by—

(1) Blocking the advance of the enemy main body.

(2) Offensive action or threat against one or both flanks of the enemy main columns.

(3) A combination of (1) and (2) above.

b. By tenacious and varied forms of offensive action supported by long range fire, cavalry endeavors to impede the progress of enemy infantry, causing it to leave the road, maneuver, and deploy.

c. Repeated flank attacks effect great delay. These attacks are primarily by fire but no opportunity for launching an effective surprise attack should be lost.

d. Wide dispersion and separation of portions of the delaying force beyond supporting distance are frequently possible and desirable.

239. Against cavalry.—*a. Conduct.*—(1) A delaying force of cavalry operating against cavalry keeps its units more concentrated than against less mobile forces. It retains its subordinate units within supporting distance of each other. Continuous and wide reconnaissance is imperative.

(2) Every effort is made to take the enemy by surprise. When surprise is possible, short range fire combined with a mounted attack is often effective.

(3) The delaying force checks the enemy by bold and aggressive action, mounted and dismounted. It then withdraws quickly before the enemy can launch its attack.

(4) In addition to such local reserves as may be provided by subordinate units, a larger reserve for the entire force should be held out.

b. Terrain.—Use is made of all favorable terrain features to prevent the enemy cavalry from deploying quickly and from delivering mounted attacks easily. If natural obstacles do not exist, artificial ones should be improvised and all available means employed to delay his progress. Parallel ridges which cross the axis of delay greatly favor delaying operations.

240. Light machine guns.—The light machine gun is of value in causing the enemy to deploy beyond the range of effective rifle fire. As the delaying force may, and usually does, withdraw before the enemy gets within close range, the light

machine gun in small commands (without artillery or heavy machine guns) may be the only weapon to fire in any position. It should, therefore, be given the choice of position by the rifle unit, under the control of which it may be operating. No matter what the disposition, all guns should be in position at the beginning of the action. None should be kept in reserve. They should fire at the most remunerative targets, leaving fire on enemy individuals, who may infiltrate forward, to the riflemen.

241. Heavy machine guns.—a. The heavy machine gun is the most important weapon within the regiment for delaying purposes. Lacking artillery, a command in a delaying position opens fire first with its heavy machine guns. These guns may be kept together by a regimental commander but, since each delaying position is usually thinly held and therefore wide, it is more normal for the regimental commander to attach a platoon of machine guns to each rifle squadron, especially should the squadrons occupy a position abreast. The squadron commanders should keep the attached heavy machine-gun platoons together, rather than attach machine-gun sections to rifle troops. The guns should be posted on commanding ground with good observation and good fields of fire to the front up to the limit of their usable range. Fields of fire at close range are not so important. All guns should be placed in action. Flanking positions are not, in this case, necessarily the best, since most of the fire will be on the heads of columns before they deploy, with an effort made to catch them in defiles, such as bridges, saddles in the ground, and draws. Positions permitting overhead and indirect fire are desirable if there is time to prepare firing data. Sections, or even squads, may be separated by considerable intervals in order to cover a wider front and to deceive the enemy as to the strength of the position.

b. Gun positions for both light and heavy machine guns in the second position should be reconnoitered before its occupation. This is usually done by the second in command of the unit concerned. In large commands, heavy machine guns may sometimes be ordered to occupy temporarily intermediate delaying positions between the main delaying positions. Guns in the second position should be ready to fire before those in the first position withdraw.

242. Antimechanization weapons.—All caliber .50 machine guns should be placed well out toward the probable avenues of approach of armored vehicles and should fire on enemy vehicles at the earliest possible moment which promises hits. Vehicles on roads or in defiles present the best targets. In emergencies the guns may also be used to fire on machine guns. The guns may be held under regimental control or attached to each squadron. They should have a suitable escort of riflemen.

243. 37-mm guns.—The 37-mm guns should be used under regimental control to silence enemy machine guns. They may be used against armored vehicles. They should be placed on high ground.

244. Armored cars and scout cars.—Armored cars and scout cars conduct reconnaissance to locate and maintain contact with the hostile forces. They may be directed to delay the advance of the enemy. When the enemy gains contact with the delaying force, armored cars and scout cars withdraw to the flanks and conduct reconnaissance of the hostile flanks and rear to discover hostile envelopments. When the horse cavalry withdraws, armored cars and scout cars may be used to delay the hostile advance until the withdrawal is effected. The cars then continue on reconnaissance as before.

245. Artillery and engineers.—*a. Artillery.*—(1) The cavalry commander gives his artillery commander early information of selected delaying positions so that the artillery commander can initiate his reconnaissance and select the artillery positions.

(2) The primary mission of the artillery is to force the enemy's columns to make an early deployment.

(3) Close liaison is necessary between the cavalry commander and his artillery commander so that the latter may be kept informed of the situation and given timely warning when the artillery is to begin its withdrawal.

b. Engineers.—Engineers impede the hostile progress by constructing obstacles and by demolitions.

246. Aviation.—Observation aviation, when a part of a delaying force, maintains continuous reconnaissance over the area in which the enemy is operating. Attack planes, if available, are used to attack those hostile elements offering the most serious threat to the delaying forces.

247. Chemicals.—*a.* Smoke may be employed to cover withdrawals and conceal dispositions and movements.

b. Nonpersistent agents may be employed to delay deployments, disrupt communication, and disorganize attacks.

c. Persistent agents may be more generally used in delaying action than in other forms of cavalry action. Areas abandoned by the delaying force may be denied the enemy by their use. Care must be exercised that areas favorable for subsequent offensive action are not affected.

MECHANIZED CAVALRY

248. Methods.—*a.* Delaying action is characterized by the defensive action of part of the command, as, a reinforced troop or squadron, against the head of an advancing enemy unit, while the remainder of the mechanized unit threatens or attacks the hostile flanks and rear.

b. When the situation or mission does not specifically require that the heads of the columns be blocked, the maximum delay may be best secured by operations against the flanks or rear exclusively.

c. If the enemy is mechanized, the maximum delay may be secured through natural and artificial obstacles and skillful use of terrain combined with harassing action as opportunity offers. In this case a large reserve is held out.

d. Armored-car units possess considerable delaying power and may be so employed on secondary missions. When the delaying action is carried on by combat-car units operating separately, armored cars may be attached.

SECTION VIII

DEFENSE OF DEFILES

HORSE CAVALRY

249. Methods.—In case of a long defile, defense may be conducted in three ways, depending primarily upon the purpose of the defense:

a. In front of the defile.

b. Within the defile.

c. In rear of the defile.

250. Conduct.—*a. In front of the defile.*—(1) The defender's fires are divergent and his maneuver space is limited. The position is weak and should be employed only to cover a debouchment or withdrawal.

(2) If such position is occupied, it should be far enough to the front to protect the entrance from hostile fire, especially that of artillery. If the flanks are accessible, detached posts must be located to prevent outflanking.

b. Within the defile.—The restrictions imposed by a defile upon the defender's mobility and front make defense wholly within the defile a difficult operation. A small force may, however, delay a greatly superior force for considerable time.

c. In rear of the defile.—(1) This is the most suitable position from which to defend a defile, because the attacker's front is limited, his maneuver is restricted, and he is subjected to converging fires.

(2) The distance of the first line from the exit should be such as to enable converging fires to be brought upon the hostile columns before they can debouch.

(3) The defense is greatly augmented by sending forward a detachment to delay within the defile.

MECHANIZED CAVALRY

251. Mission.—*a.* To seize and hold a defile temporarily may be considered a mission for which mechanized cavalry is suitable.

b. The mission may be an independent one but is usually carried out in cooperation with other troops who take over the holding mission upon their arrival.

252. Employment.—For methods of employment of a mechanized cavalry unit, see section III.

SECTION IX

DEFENSE OF A RIVER LINE

HORSE CAVALRY

253. Methods.—Due to the obstacle created by the river itself, a river line is of special significance when choosing a particular piece of terrain along which to defend. Although the

stream itself with its surrounding territory may not create extremely difficult obstacles, nevertheless the crossing force is usually at a disadvantage while in the act of crossing because the defenders may have the opportunity to secure superior terrain on high ground that may face the river bottom. There are three general methods of defense of river lines; on the enemy's side, at the river's edge, and well back from the river.

a. On the enemy's side.—This method assumes that the defense holds the existing points of crossing. The defending force employs delaying action or takes a defensive position on the enemy's side of the river.

b. At the river's edge.—(1) This defense is made with a view of meeting the enemy at the water's edge while he is in the act of crossing. The entire length of the stream available for the enemy's crossing is divided into defensive sectors and each sector is held by a defending force which can concentrate at any point of attempted crossing faster than the enemy can cross his troops to the defender's side. In this method all parts of the threatened line must be held in some strength because, there being no available reserves, a penetration at any one point will lead to defeat. Comparatively large forces are required for successful defense. This method lends itself to delaying action rather than to decisive action.

(2) A successful defense at the river's edge normally requires the following conditions:

(a) A narrow frontage in proportion to the strength of the defenders.

(b) Flanks secure.

(c) No possible points of crossing beyond the defended area.

(d) River wide enough to hold the enemy under fire for considerable time while crossing. The nature of the banks on both sides must be considered.

c. Holding main body well back from the river.—This method is of general application and lends itself to decisive action. The bank on the defended side is held by security and delaying detachments. The main body is located at such distance from the river and with such dispositions as to permit it to move rapidly to any threatened part of the defended front. Its action

is either offensive or defensive, according to the circumstances. The normal features of this form of defense are—

- (1) Vigorous air reconnaissance into the enemy's territory.
- (2) Constant patrolling across the river into the hostile lines to obtain information and identifications.
- (3) Constant ground observation of the enemy's territory.
- (4) The employment of vigorous security measures.
- (5) Locating sufficiently strong forces at probable points of crossing to prevent other than large forces from crossing the river. This will delay the crossing and deployment of large forces until the general reserve can come up and either counter-attack or occupy a defensive position.
- (6) Locating artillery so that it can fire upon the hostile concentrations for the attack and their lines of approach.
- (7) The taking up of a position by the main body at a point most central to the probable points of hostile crossing and with good roads leading thereto.
- (8) Concealment of movements and dispositions.
- (9) Provision for liaison and signal communication.

254. Armored cars and scout cars.—Armored cars and scout cars are used to conduct reconnaissance to locate and maintain contact with the enemy. They may be used to delay the advance of the enemy. When the enemy approaches to attack the river line, the cars withdraw to the flanks to conduct reconnaissance of the hostile flanks and rear to discover where the hostile reserves are to be employed.

MECHANIZED CAVALRY

255. Employment.—*a.* Mechanized cavalry may be employed temporarily to defend a river line, pending the arrival of other forces.

b. Plans are made for defense, including methods, similar to that prescribed for horse cavalry. Unless the situation demands otherwise, the defense will usually be made well back from the river with a large reserve held in one or more central localities.

SECTION X

RETROGRADE MOVEMENTS

HORSE CAVALRY

256. Definition.—A retrograde movement is any movement of a command to the rear, or away from, the enemy. Such a movement may be classified as a withdrawal from action, a delaying action, or a retirement. Each of these operations has many points in common with the others.

257. Withdrawal from action.—A withdrawal from action is a retrograde movement by which all or a part of a deployed force breaks away from an engagement or from immediate contact with the enemy. The withdrawal from action, or breaking of contact with the enemy, is not a complete action in itself; it is always the initial phase of some other action. Thus a unit withdraws from action and retires, or withdraws from action and takes up a defensive position.

a. Direction.—(1) The direction of withdrawal or retirement should be such as to favor the future employment of the command.

(2) The direction given each subordinate unit is called its line of withdrawal and is the direction taken by deployed units in breaking off the engagement.

b. Route or zone of action.—In a night withdrawal, routes are prescribed. In a daylight withdrawal, greater freedom of action is given the troops by assigning a zone of action to each major unit.

c. Control.—(1) During a withdrawal from action, a partial loss in control is suffered by commanders of the larger units. However, control is regained in a daylight withdrawal by making provision for assembling the command for further dispositions; in a night withdrawal, control is regained by forming the command directly into march column or columns at initial points.

(2) Local commanders designate assembly positions for their own units. Each subordinate unit is then conducted from its own assembly position to that of the next higher unit, or to its place in the march column. When a defensive position is to be taken up, they may proceed to the sector assigned them on the new position.

d. Time withdrawal from action should be initiated.—When the mission and situation permit, a withdrawal from action is invariably made under cover of darkness. Should existing circumstances necessitate a daylight withdrawal, the distance to the led horses and the character of the terrain are considerations in determining how close the enemy may approach before withdrawal must begin. In a delaying action the withdrawal should never be delayed until the enemy's assaulting forces are at close grips with the troops occupying the delaying position.

e. Supply and evacuation.—The trains need consideration from the following viewpoints: Replenishment of ammunition and supplies; evacuation of casualties and their early withdrawal to a safe position in such a manner as not to interfere with the retirement of the troops.

f. Covering force.—The withdrawal from action is normally protected by a covering force. This covering force, composed of available formed troops under a separate commander, normally takes position to the rear and on the threatened flank so that it can effectively protect the retrograde movement without having its own fire masked. The missions of the covering force are to delay the hostile advance and gain time for the withdrawing force to extricate itself and subsequently regain its initiative and freedom of action.

258. Classification of withdrawals.—Withdrawals from action are classified as daylight withdrawals and night withdrawals.

a. Daylight withdrawals.—(1) *Covering forces.*—(a) Local covering forces are designated and placed in the best available positions by local commander.

(b) The commander of the entire force designates a general covering force to cover the withdrawal from action of the whole command.

(c) The commander of the whole force regulates the time this covering force is required to hold. The time required to withdraw and assemble the main forces is the controlling factor.

(d) The covering force may then constitute the rear guard, or the outpost, depending on the situation.

(2) *Covering position.*—Usually the covering position is selected well to the rear and to the flank of the axis of withdrawal. It should be close enough to permit it to cover the

withdrawal of the local reserves. Its position on the flank insures that its fire will not be masked.

(3) *Order in which units are withdrawn.*—Usually those units least seriously engaged are withdrawn first. When no part of the unit is seriously engaged, the entire line may be withdrawn simultaneously.

(4) *Orders.*—Time being a vital consideration in a daylight withdrawal, orders are more or less fragmentary in form. Either oral or dictated orders are issued. Withdrawals must be anticipated and plans prepared in advance.

(5) *Execution of the withdrawal from action.*—Upon receipt of the order to withdraw, trains and such rear elements as can be spared are withdrawn at once. The local covering forces and the general covering force are moved into their positions promptly. The deployed units move straight to the rear until the smaller units can be assembled. As each subordinate unit is assembled it is conducted to the assembly position of the next higher unit.

b. Night withdrawals.—The basis of success in a night withdrawal is the secrecy with which it can be accomplished.

(1) *Covering force.*—During a night withdrawal, the covering force is composed of the outpost or of designated fractions of the firing line left in place, supported by formed elements posted on or near the most dangerous avenues of approach. The rearward movement of the covering force is retarded until the supreme commander is assured that the columns have cleared the initial points.

(2) *Time of withdrawal.*—(a) When a withdrawal from action is made under cover of darkness, the trains and rear elements are started to the rear immediately after nightfall. The hour at which the front lines are withdrawn depends upon the mission and the situation.

(b) The priority of the withdrawal of units depends upon the situation and the subsequent purpose of the commander. In the normal case, the units of the front line are withdrawn nearly simultaneously.

259. *Withdrawal of small commands.*—a. A small command, such as a squadron or lesser force, may withdraw from action suddenly, as a whole, when some natural or artificial

cover offers protection from hostile fire. The enemy is kept in ignorance of a contemplated withdrawal as long as possible.

b. The existence of cover and concealment and the distance to the led horses determine the time when small cavalry units must abandon the firing line. The led animals are held as close to the firing line as is consistent with their safety.

260. Auxiliary arms.—Close liaison must be maintained with commanders of auxiliary units. This is particularly true of artillery and machine-gun unit commanders who must be given timely information of the proposed withdrawal so that they may complete their preparations for a change of position and redistribute the fire missions of their units.

a. *Artillery.*—(1) The commander of troops issues preliminary instructions covering the following points: Artillery to be attached to the covering force and to flank and delaying detachments; general location of the artillery positions in the new defensive or assembly position and what units it will be prepared to support; routes assigned to the artillery and general plan for its withdrawal.

(2) The covering force should be strong in artillery and machine guns. This artillery is located within effective range of the enemy before he starts his pursuit.

(3) The mission of the artillery with the covering force is to compel the enemy to deploy, remain deployed, and to delay his leading elements.

b. *Machine guns and 37-mm guns.*—In withdrawing from one position to another, light machine guns should remain in the forward position long enough to derive the greatest value from their fire. Unless it is intended to sacrifice the guns, there should always be at least a few riflemen to cover their withdrawal. The guns withdraw on order of the troop commander if they are kept together as a platoon, or on order of the commander of any smaller unit to which they are attached. Heavy machine guns withdraw by echelon. They assist in covering the withdrawal of rifle units, but should always have at least a few riflemen to cover their withdrawal. The presence of light machine guns permits the heavy machine guns to withdraw early. Caliber .50 machine guns and 37-mm guns withdraw by echelon.

c. *Engineers.*—In a withdrawal from action the engineers are used principally to prepare obstacles to impede the progress of

the pursuing enemy. During the withdrawal, engineer officers may reconnoiter delaying positions to the rear.

d. Aviation.—The use of observation aviation for attack purposes to assist ground troops in their fire fights is justified only in extreme emergency. Primarily, observation aviation is used to maintain continuous reconnaissance over the entire area in which the enemy may operate, being particularly watchful for any hostile flanking movement. Attack aviation, when available, is used to attack the most pressing and dangerous units of the hostile force.

e. Chemicals.—Smoke screens afford excellent protection during the final withdrawal.

261. Retirement.—A retirement is a retrograde movement by which a force seeks to regain freedom of action by moving to the rear and interposing a covering force between itself and the enemy. Its purpose is to refuse decisive combat under the situation existing at the time. It is executed in accordance with the will of the commander and with a definite plan. The retirement of a force in contact with the enemy is initiated by a withdrawal from action. Although the delay of the enemy is not the primary purpose of a retirement as it is in a delaying action, the covering force of a retiring command may be compelled to employ delaying action in order to gain time and space for the retirement of the main body.

262. Delaying action.—See section VII.

MECHANIZED CAVALRY

263. Withdrawals.—Because of its characteristics, mechanized cavalry is particularly suited for breaking off contact with hostile forces followed by rapid movements to the rear where march column is re-formed or a new position occupied. In such a withdrawal, armored-car units cover the flanks and maintain close contact with the enemy. Withdrawal of mechanized elements may be covered by providing strong counterattacks supported by machine guns in rear positions. The mortar elements may be effectively employed to cover the withdrawal by the use of smoke.

SECTION XI

COMBINED DEFENSE

264. General principles.—Combined units of horse and mechanized cavalry operate defensively in accordance with the general principles of defensive tactics. In general such a combined unit is capable of offering a strong active defense or of executing a strong delaying action.

265. Horse cavalry.—*a.* The horse cavalry units furnish the outpost and holding forces which organize and defend the position. In general a maximum use is made of dismounted fire power, especially heavy machine guns and artillery, and a minimum use of dismounted rifle units. A local reserve of horse cavalry should be held, its size depending on the character of the enemy and the mission of the whole force. Local security and local reconnaissance are also furnished by the horse cavalry. Plans must be made in advance to launch a local counterattack or join in a counteroffensive in conjunction with the mechanized cavalry units in reserve.

b. In delaying operations, the horse cavalry units may contain and delay the heads of the hostile approaching columns, while the mechanized units attack the flanks and rear of the approaching enemy.

266. Mechanized cavalry.—The mechanized cavalry units furnish the troops for distant reconnaissance and for the reserve. The most important use of the mechanized units will be in the active defense where it may counterattack or launch a counteroffensive over terrain carefully selected and previously reconnoitered for the action.

267. Aviation.—*a.* Attack aviation may be used in cooperation with a combined horse and mechanized cavalry unit to delay approaching hostile units.

b. Observation aviation should always be available for use with such a force on distant and battle reconnaissance missions.

268 Artillery.—The horse artillery should support the horse cavalry. The mechanized artillery should support the mechanized unit. Additional artillery, either mechanized or truck-drawn, may be attached from higher headquarters. The maximum use must be made of artillery fire. Counterattacks or

counteroffensives of the mechanized general reserve must be supported by all available artillery, both horse and mechanized.

269. Reconnaissance.—Reconnaissance must be continuous and should be extended to a sufficient distance from the main body to furnish it all-around security and freedom of maneuver, especially against hostile mechanized units. The aerial and ground reconnaissance must be coordinated by the commander of the whole force. Distant reconnaissance is furnished by observation aviation and by mechanized units. Close and battle reconnaissance are furnished by both the horse and mechanized cavalry units for the battle position. The mechanized units furnish their own close and battle reconnaissance when they are launched in a counterattack or counteroffensive.

270. Security.—Every known means must be used to protect the command from hostile attacks from any direction. Terrain which favors defense against mechanization must be used to the utmost. Particular attention must be paid to the flanks and rear of the defensive positions.

CHAPTER 6

SPECIAL OPERATIONS

SECTION I

RAIDS

271. Definition.—A cavalry raid is an operation executed by a detached force of cavalry, often reinforced by other mobile troops, for the purpose of suddenly damaging the enemy at a sensitive point. Upon completion of the mission, the force returns to the main command.

272. General considerations.—*a.* Concise missions and definite objectives are given to the commander of the raiding force.

b. In order to justify diverting a part of a command from its normal duty in connection with a main operation to participate in a raid, the results to be accomplished by the raid must be commensurate with the disadvantages resulting from detaching troops for this duty.

c. The safety and success of a raid depend on careful planning and daring execution. Keen perception, foresight, rapid decision, and great energy are indispensable qualities for the leader of a raid.

d. To a large extent a raid is dependent upon surprise. It calls for rapid and continuous action and may entail a heavy expenditure of men, animals, vehicles, and matériel.

e. Before ordering a raid, the higher commander determines the objectives to be obtained by the raid; whether or not the objective is worth the cost; whether or not the same results could be obtained as effectively with less expenditure of men, vehicles, and animals by the use of other forces, such as aviation; and whether or not the raiding troops could be better employed on other missions.

273. Objectives.—Raids may have as their objectives any of the following:

- a.* To interrupt hostile lines of communication.
- b.* To destroy supplies in rear areas.

c. To cause confusion in rear areas, particularly among the civil population.

d. To destroy munition plants and factories.

e. To create a diversion by causing the enemy to move troops to a threatened locality.

274. Strength and composition.—A raiding force must be capable of independent operation and of such strength and composition as to enable it to accomplish its mission. A cavalry raiding force may be strengthened by attaching aviation, artillery, or additional motor supply units. The size of the raiding force is determined after considering not only the combat strength desired, but also the speed and mobility necessary for the execution of the raid.

275. Preparation.—*a.* The raid must be carefully prepared. All possible information of the locality or area to be raided is gathered. Routes of advance and probable routes of return may be reconnoitered and photographed from the air and tentatively selected before starting. The general plans for the raid are worked out and alternative measures considered.

b. The commander of the raiding force is informed in detail as to the plans of the higher commander and the locations of friendly troops.

c. Supply is carefully arranged, for it is indispensable that the raiding force have freedom of movement. To this end the transportation is reduced to the minimum. When conditions permit, the raiding force makes use of the resources of the country traversed.

d. The great strain and effort of a raid require the highest state of efficiency and morale in the command. Weak or unfit men or animals and all unnecessary matériel are left behind.

276. Special precautions en route.—Darkness may be used to conceal much of the movement, especially the start. Halts are made in woods or other places well concealed from enemy observation. Bridges are destroyed, unless the route is to be used in returning or the destruction is forbidden by higher command. Telegraph and telephone lines, when no longer useful to the raiders, are cut.

277. Approaching the objective.—*a.* As the raiding force approaches the objective, the leader uses all sources of information to determine the strength, dispositions, and defenses of

the enemy and the character of the terrain. Plans for combat are made while the command is still some distance from its objective and the raiding force is kept well in hand.

b. When the objective has been reached, the raiding force proceeds boldly to the accomplishment of its mission.

c. When the mission requires considerable time to accomplish, as in the destruction of a railroad or manufacturing plant, a part of the force is assigned to this task; the remainder is held concentrated and ready for combat. Security detachments and patrols cover all avenues of approach.

278. The return.—*a.* A raiding force does not retain possession of its objective but returns to some designated locality. Since the enemy has been aroused and will spare no efforts to punish the raiders, the return is usually the most difficult part of the operation.

b. The route of return usually differs from that taken on the march to the objective. Fatigue of men and animals makes it advisable to avoid useless combat.

279. Suitability of mechanized cavalry.—*a.* Where the terrain offers a variety of routes of advance and retirement, mechanized cavalry units are particularly well suited for raiding missions.

b. Because of its mobility, mechanized cavalry may be sent to more distant points or may be employed where time is limited. It is essential that sufficient supplies be carried by the mechanized cavalry to take the raiding force to its objective and return it to friendly sources.

SECTION II

CONVOYS

280. Definition.—A convoy is a unit which operates on land or sea or in the air and is organized for the purpose of effecting a protected transfer of supplies, matériel, or personnel from one point to another. It includes the escort and the transportation, supplies, matériel, or personnel convoyed. This section is confined to tactical considerations pertaining to convoys by land only. The transportation involved in convoys pertains to the subject of logistics.

281. Protection.—*a.* Protection for a train or column is afforded by an escort accompanying the train or column or by mobile detachments stationed along the route of travel. Special protection is required for trains or columns employed in transporting supplies over long and weakly held lines of communication, trains employed in requisitioning supplies from territory not securely held by friendly forces, and the trains of units operating at a distance from friendly troops.

b. Commanders of troops and areas are responsible for the protection of all transportation and supply units whose movements they regulate.

282. Command.—The senior line officer on duty with the escort or with the troops being escorted commands the convoy.

283. Organization.—The convoy is divided into two parts, the escort and the transport.

a. The escort.—Escorts vary in strength and composition with the size and importance of the train or column, length of the journey, nature of the terrain, and the risk involved. Engineers may be attached to the escort to repair roads and bridges. Artillery is rarely employed.

b. The transport.—All transport is organized into groups having the same marching rates. The slowest element fixes the rate of march of the column. Convoys of mixed transport are resorted to only under exceptional circumstances.

284. Elements.—*a.* The transport elements of motor convoys include motor transport units or parts thereof, or hired or requisitioned motor vehicles, similarly organized.

b. There may also be convoys of pack trains, animal-drawn transportation, or prisoners.

285. Methods of operation.—*a. Horse cavalry.*—The escort is divided into an advance guard, a main body and, when necessary, a rear guard and a flank guard. The functions of these elements are in general the same as those of corresponding elements of other columns.

b. Mechanized cavalry.—Normally, mechanized cavalry will protect the movement of motorized units by reconnaissance; by covering the routes of march and the flanks adjacent thereto; and by seizing key positions, rather than by assigning a large proportion of the command to march with the transport column.

SECTION III

DIVISION CAVALRY

286. Definition.—Division cavalry is cavalry which is assigned or attached to an infantry division. It may be entirely horse cavalry, entirely mechanized cavalry, or partly horse and partly mechanized cavalry.

287. Missions.—*a.* Missions assigned division cavalry should be such as to contribute toward the successful accomplishment of the general mission of the division.

b. Cavalry commanders must appreciate the requirements of infantry in order to assist in executing their missions. Missions assigned to division cavalry should be in keeping with and utilize to the maximum the characteristics of cavalry.

288. Assistance to infantry.—*a.* Division cavalry, properly employed, extends the scope of infantry operations and assists in securing freedom for infantry maneuver.

b. Division cavalry utilizes its mobility to save infantry time and fatigue.

289. Role.—*a.* The normal role of division cavalry is—

(1) *Reconnaissance.*—Gathering information upon which to base tactical dispositions for the force for which operating.

(2) *Security.*—Protection for the force with which operating.

b. Incident to the accomplishment of the above, cavalry will be called upon to participate in combat and perform a variety of tasks.

c. Due to the small strength of division cavalry and the fact that its reconnoitering and protective duties entail a considerable degree of dispersion, division cavalry cannot be expected to take strong offensive or defensive action by itself.

290. Assignment of missions.—A division occupies such an extent of ground, both in breadth and depth, that more than one mission may be assigned division cavalry, in which case the priority should be stated.

291. Plans.—The commander of the division cavalry must know the details of the tactical plan, intelligence plan, administrative plan, and signal plan of the division. Special attention must be devoted to the question of signal communication.

292. Liaison.—The infantry and cavalry must maintain constant combat liaison as well as command and staff liaison.

The latter is accomplished by exchange of visits of commanders or representatives and by detailing liaison officers and detachments at the respective headquarters. Combat liaison is accomplished by small liaison details or combat patrols at points on the front or flank where the infantry and cavalry are in touch with each other.

293. Employment.—The cavalry operations described below indicate the type of action which may be required of division cavalry.

a. Operations preceding combat.—Prior to the combat of the division, the cavalry may be employed to—

(1) Reconnoiter hostile dispositions and movements, obtain identifications, and obtain detailed information of the terrain.

(2) Screen troops in movement or in position.

(3) Delay the movement of hostile forces.

(4) Seize and hold a position in advance.

(5) Protect the flanks.

(6) Assist in providing security.

b. Operations during combat.—During combat the cavalry may be employed to—

(1) Reconnoiter the enemy's movements and dispositions.

(2) Protect the exposed flank or flanks.

(3) Delay or contain hostile reinforcements.

(4) Operate against the enemy's flanks and rear.

(5) Screen the movement of troops.

(6) Serve as a mobile reserve.

c. Operations, after combat.—After a decision has been reached in the battle, the cavalry may be employed to—

(1) Pursue a retreating enemy.

(2) Reconnoiter the enemy's movements and dispositions.

(3) Assist in a withdrawal from action.

(4) Protect a retirement.

d. Escort.—Cavalry may be employed to act as escort for troop movement by motor transportation.

PART TWO
LOGISTICS
CHAPTER 1
MOVEMENTS AND SHELTER
SECTION I
MARCHES

294. Classification.—*a.* According to purpose, marches may be classified as those made—

- (1) To train and condition officers, men, and animals.
- (2) For concentrating troops.
- (3) In the presence of the enemy—
 - (*a*) When combat is expected.
 - (*b*) When combat is not expected.

b. According to time, marches may be classified as—

- (1) Daylight marches.
- (2) Night marches.

c. According to distance covered in a specified time, marches may be classified as—

- (1) Ordinary marches.
- (2) Forced marches.

295. Importance.—*a.* Marching is of great importance to all arms as successful strategical and tactical operations are usually dependent upon successful marches. A successful march is one which places the command at the required place, at the required time, in condition to perform the assigned mission. A commander must march his command so as to meet all three of these requirements.

b. Marching is of further importance to cavalry because mobility is the chief characteristic of cavalry. A cavalry leader must be able to conduct, with skill, a rapid and sustained movement of cavalry troops. Except for movement by truck or train, the strategic mobility of cavalry can be increased only by improvement in its marching ability.

296. Discipline.—Based upon the considerations affecting the marching ability of cavalry, certain rules and regulations for the conduct of those participating in the march have been evolved. The observance of these rules and regulations is known as “march discipline.”

297. Preparation.—Careful preparation contributes materially to the success of the march. These preparations insure that men, animals, and motor equipment are in the best possible condition; that all units are properly equipped and supplied; that traffic arrangements are perfected; that trains are loaded as prescribed; that measures are taken for the replenishment of supplies; and that provision is made for the care and evacuation of the disabled.

298. Orders.—*a.* The following orders are usually issued in connection with marches:

- (1) Warning orders.
- (2) March orders.
- (3) Halt orders.

b. In general, a warning order is issued to permit of timely and detailed march preparations. It consists of simple directions to insure readiness of the command to march at a specified time.

c. The march order prescribes the details of the march. In general it gives the march objective and route or routes of march, the distribution of troops, and the order of march of the column or columns. These details are such as to insure proper tactical dispositions during the march, to facilitate the expected employments of units, and to reduce to a minimum the hardships of the march. The order prescribes special security measures to be taken, the hour of starting, and the initial point or points. (See pt. one, SOFM, pp. 47-52, incl.)

299. Conduct.—*a. Time of starting.*—The tactical situation may require marching at any hour of the day or night. When the tactical situation does not govern, marching during the day is the rule. Daylight marches begin as early as is consistent with allowing ample time after daybreak for the men to breakfast, animals to feed, and the transportation to be loaded without undue haste. Night marches are often made to escape the heat of the day or for practice.

b. Initial point.—(1) An initial point is selected in order to form a column by the successive arrival of the various subdivisions thereof without interference with one another. It should be a point easily recognizable on the ground, of easy access to the units of the command, and in the direction of the contemplated march.

(2) Subordinate commanders consider the road space, the rate of march, and the distance to be covered by the different elements of their commands. From these they determine the time required to reach the initial point. They then select their own starting point and commence their march so as to arrive at the initial point at the proper time.

c. Rate and length.—Rate and length of marches are dependent upon numerous conditions, some of which are—

- (1) Condition and training of the men.
- (2) Age, quality, training, and condition of the animals.
- (3) Condition of motor and mechanized vehicles.
- (4) Supply situation.
- (5) Tactical requirements; formation, enemy resistance.
- (6) Opportunities for rest.
- (7) Weather, terrain, and roads.
- (8) Length of columns.
- (9) Day or night marching.

d. Schedules.—A march schedule is a chart, prepared in advance, which indicates the amount of time a horse unit must trot, walk, or lead or the speed a mechanized unit must maintain to cover a certain distance in a given period. From the map or other sources, all possible information of the route should be obtained. Even when such information is very complete, the commander seldom can adhere strictly to a pre-arranged schedule. As a rule, therefore, schedules must be flexible and must conform to the terrain.

300. Disposition.—*a.* The guiding factor in determining the correct march dispositions is the enemy situation.

b. When contact with the enemy is remote, the principal objects of march dispositions are to facilitate the movement of troops and to insure to all the maximum comfort. March columns, as far as practicable, are composed of elements having the same march rate.

c. When contact with the enemy is probable, tactical considerations govern. Marching columns are constituted in accordance with tactical missions. The various elements in each column are so arranged as to facilitate the expected employment of units and to meet the requirements of security.

301. Formations and distances.—*a.* When cavalry operates well in advance or to a flank of other arms, it is free to utilize all routes of advance.

b. Depending upon the mission, terrain, size of the command, and enemy situation, cavalry marches in one or more columns. One column facilitates control and deployment to a flank. Two or more columns facilitate deployment to the front. Numerous small columns or irregularly dispersed formations favor concealment from aerial observation and reduce casualties from aerial attack. If contact with ground troops is expected, the difficulties of control of dispersed formations must be considered. As a general rule, full advantage should be taken of the available road net.

c. Unless the tactical situation demands a compact formation, distances between units in a column are usually increased to reduce hardships, to afford small units advantage of favorable terrain for increased rates, and to facilitate uniform progress of the command. When exposed to artillery fire or to aerial attacks, greater distances are taken between units to reduce the vulnerability of the column.

302. In the presence of the enemy.—In time of war all bodies of marching troops within the theater of operations may be subject to attack. Security measures must be provided.

303. Night marches.—*a. Reasons for night marches.*—In order to avoid hostile air observation and attacks and mechanized attacks, night marches in the combat zone are the rule. Surprise is one of the most important elements of cavalry strategy and tactics. Under the conditions of modern warfare, it will often be difficult for cavalry to gain surprise unless it marches at night.

b. Difficulties of night marches.—(1) The psychology of men changes in many ways with darkness. Vision becomes limited and as a consequence there exists a comparative ignorance of the surroundings. This enlivens the imagination and often

leads to serious mistakes. The rate of march may be materially reduced.

(2) It is necessary to train cavalry units, not only in the mechanics of night marches and night operations, but to accustom them by experience to psychology of darkness. Darkness greatly increases the difficulties of finding and following unknown roads and retards the march on poor roads, on trails, or across country. The following measures should be taken in order to reduce the difficulty of night marches:

(a) Adequate preparation prior to the march.

(b) The situation permitting, the march is started at dusk so that all preparations can be made by daylight. When secrecy is desired the march should start after dark and all movements cease by daylight.

(c) All commanders should exact rigid march discipline and traffic control.

(d) Advantage is taken of moonlight and good roads. Lights are used if the tactical situation permits.

(e) When possible, routes are reconnoitered and marked. Available armored cars and scout cars can render valuable assistance in this respect.

(f) Guides are used when available, and men are posted at road forks, in cities, and in towns to direct troops.

(g) Close contact and communication between units is maintained. A white rag tied on the cantle of each saddle or horse's tail is useful on dark nights. Mechanical devices may be used to shield the lights of motor and mechanized vehicles. Bounds may be designated.

(h) On a secret march at night, in addition to the foregoing precautions, silence is maintained, articles of equipment are secured to prevent rattling, and smoking and lights are prohibited.

(i) Ample time is allowed for the completion of the march.

(j) The situation and instructions from higher authorities permitting, full use is made of radio for control of the march.

304. Forced marches.—*a.* A forced march is one in which a command, during a given period, covers a distance considerably greater than is normal for the unit concerned. As the fighting power of even the best troops may be seriously impaired by such marches, they are undertaken only in case of emergency.

b. The conduct of a forced march is controlled by the condition of the men and animals or vehicles, the distance to be covered, and the time in which the march is to be accomplished. The march is conducted so that the troops are in condition to accomplish the purpose of the march at its completion.

c. Long, forced marches are usually accomplished by increasing the number of marching hours per day rather than increasing the rate of march. For short, forced marches where time is important the rate may be increased, especially in small commands.

305. Training marches.—Training marches, which form a part of the field training of troops, are made with the following objectives: To harden men and animals and to keep them in proper physical condition; to instruct officers and men in the duties incident to campaign, such as marching, camping, and cooking; to learn the capabilities of motor and mechanized equipment; and for tactical training. These should be accomplished under assumed tactical and logistical situations which approximate as closely as possible wartime conditions.

306. Halts.—Halts comprise those periods during which the active marching conditions cease. Halts provide the opportunity for rest, sleep, and the preparation of the command for further effort. The exercise of good judgment and forethought in the preparation and conduct of marches include provisions for halts.

a. *On the march.*—(1) Periodic rests are prescribed and regulated by the commander of the unit. They are intended to rest the men, rest and relieve horses of their loads, and for servicing, care, inspection, and maintenance of vehicles.

(2) Long halts in the course of a march are not made unless special conditions or the length of the march requires it. When such halts are made, every consideration should be given to gaining the maximum advantage afforded by the halt.

(3) Unscheduled halts sometime occur. When this is the case the information as to the probable duration of the halt and other necessary instructions should be promptly transmitted to subordinate commanders.

b. *Upon conclusion of march.*—Halts upon the conclusion of a march involve placing the command in camp or bivouac. The place and method of halting is largely decided by the mission, tactical situation, and availability of water and cover. It is

desirable that troops reach their respective areas with the least unnecessary marching, inconvenience, or delay.

c. In proximity to the enemy.—The tactical situation forms the controlling element in the decision, plan, and preparation for the halt. Readiness at all times for combat is the underlying principle governing the dispositions and formations of the command. After contact has been gained, the commander of the unit must decide upon the time and place for halting. The location selected should gain for the command some important tactical advantage.

d. Halt orders.—The halt order should be brief. It should inform the command of the enemy situation, the areas to be occupied, measures of security, the degree of readiness to be maintained, and when necessary, supply and administrative matters. (See pt. one, SOFM.)

HORSE CAVALRY

307. Marching ability.—Marching ability varies greatly according to conditions. Under favorable conditions, seasoned cavalry should be able to march 35 miles per day at the rate of 6 to 6½ miles per hour for 6 days a week as long as the situation requires.

308. Marching gaits.—The normal marching gaits are the lead, walk, and trot. The marching rates for well-trained cavalry are—

	<i>Miles per hour</i>
Walk or lead.....	4
Trot.....	9

The gallop is used only under exceptional circumstances required by a tactical situation.

309. March and rest periods.—Any march is in reality a series of short marches of 45 to 55 minutes duration with rest periods of from 5 to 15 minutes in between. The rest periods are used to rest the horses and prepare the command for the next hour's march.

310. Rate of march.—As a rule the shorter the time horses are on the road or under saddle the better. Many circumstances have their effect on the rate of march, such as condition of men and horses, climatic conditions, length of march, road surfaces, and size of unit. The average rate may be prescribed in the march order.

311. Schedules.—*a.* It will usually be impossible to tell beforehand just when or where to walk, lead, or trot. According to conditions of terrain, the command may make 4 miles during one hour, $6\frac{1}{2}$ miles during another hour, and 5 during another.

b. The problem of a march unit commander is how many miles he must make each hour. Assuming the lead and walk at approximately the same rate, the problem reduces itself into how many minutes the command must trot during each hour. In 1 minute, $0.06\frac{2}{3}$ mile is covered marching at 4 miles per hour, and 0.15 mile is covered marching at 9 miles per hour. The following schedules based on these rates give with sufficient accuracy the number of minutes' trot required in 55-minute march periods to make the rate indicated :

Rate desired :	<i>Trotting time (minutes)</i>
$4\frac{1}{2}$ miles per hour.....	10
5 miles per hour.....	16
$5\frac{1}{2}$ miles per hour.....	22
6 miles per hour.....	28
$6\frac{1}{2}$ miles per hour.....	34

c. Based on the information available of the route and his consideration of tactical and other conditions, the commander decides on his rate of march and notes the amount of trotting required. He then changes gaits at such times as to combine the requisite amount of trot with the most advantageous road conditions, having due regard for the general principles for the conduct of marches.

d. The commander of a march unit appoints a timekeeper, who may be a pace setter, to maintain a current record of the amount of time at each gait. He should be prepared, at all times, to tell the commander the number of minutes the command has trotted since the last halt, and at each halt should compute the distance covered. For all practical purposes in computing distances marched, the following factors can be used :

	<i>Miles in 1 minute</i>
Walk or lead.....	0.07
Trot.....	.15

e. The following examples are included to illustrate the methods employed by the timekeeper in recording the conduct of a march and computing the distance traveled :

FIRST HOUR'S RECORD

Walk	Trot	Halt	1 minute walk equals 0.07 mile; 1 minute trot equals 0.15 mile
20	5		
5	7		
8		15	
33	12	15	60.
33	12		
0.07	0.15		
2.31	1.80		4.11 miles, first hour.

A SUCCEEDING HOUR'S RECORD

3	7		Lead.
3	7		Cool, cloudy, excellent roads, flat country.
3	7		
3	7		
3	7		
5	7		
		5	Lead.
20	35	5	60.
20	35		
0.07	0.15		
1.4	5.25		6.65 miles, second hour.

LAST HOUR'S RECORD

5	6		Lead.
3	6		Warm and dusty.
3	5		
3	6		
3	5		
15			Lead to camp.
32	28		60.
32	28		
0.07	0.15		
2.24	4.20		6.44 miles, march completed.

312. Preparation and conduct.—*a.* Before starting to march, each unit should be carefully inspected to see that horses are properly saddled and bridled and all equipment is in place.

b. At the start of the march, horses should be gradually warmed up by leading or walking before taking up the trot.

c. The first halt should be made within 45 minutes of starting. This halt should be of at least 10 minutes' duration. Thereafter periodical halts are made as prescribed in paragraph 313.

d. The great weight carried by a cavalry horse is his worst enemy. He should, therefore, be relieved of this weight whenever practicable.

e. Frequent changes of gait freshen both horses and men and increase the rate of march.

f. Long walks are conducive to careless riding, sore backs, and undue fatigue of the horse and rider.

g. Trots should not exceed 7 minutes at one time.

h. Leading allows riders to stretch the muscles used in riding, reduces the weight on the riding horses, and yet permits an advance at 4 miles per hour.

i. Paved roads are preferable to stony or muddy roads, deep sand, or roads full of chuckholes.

j. Trotting up or down steep hills and up long grades should be avoided.

k. Trots should as far as possible be on level ground, but trotting down a gentle grade is preferable to trotting up steep or long grades.

313. Halts.—*a.* The schedule of regular halts may be regulated by the march order of the column commander.

b. The first halt is made for the purpose of permitting the men and horses to relieve themselves and to insure proper adjustment of saddles and packs. Troopers work in pairs in readjusting saddles and loads of pack animals.

c. After the first halt, cavalry halts 5 to 10 minutes each hour. In very hot weather the halts may be longer and more frequent.

d. When the hour scheduled for a halt arrives, the commander of each unit halts the leading element of his unit. Each element of the march unit in rear of the leading element closes up to its normal distance or halts in place depending upon the orders received; units move toward the right side of the road in halting to permit normal traffic.

e. Prior to resuming the march, the commander of each march unit gives a command or preparatory signal therefor.

f. As it is generally desirable to finish the day's march as soon as practicable, long halts are made only when special conditions so require. The length of the march or the desirability of avoiding excessive midday heat may, however, render it advantageous to make a halt varying in duration from 1 to 4 hours toward the middle of the day. Except for the purposes of avoiding excessive heat or to supplement the hay ration by grazing, long halts are not ordinarily made on marches of less than 25 miles.

g. When the march is to be continued long into the afternoon, a halt of an hour or more is made at noon. During this halt, saddles and packs are removed.

314. March and regulating units.—*a. March unit.*—The squadron is the march unit. Squadron commanders control the rates and gaits in marching and the time and duration of halts of their squadrons so as to maintain the rate of march ordered.

b. Regulating unit.—The platoon is the regulating unit for the march. When the situation permits, increased distances are taken between troops and platoons so as to provide the maximum comfort for men and animals. This distance is such as will permit platoons to change the gait on the same ground as the preceding platoon and is about half the length of the platoon column. This distance is greatly increased at the trot and units are closed to the prescribed distance at the walk.

315. Discipline.—In general, good march discipline consists in the observance of the following:

a. Frequent inspections by each unit commander and his officers to see that saddles, bridles, and packs are properly adjusted and that troopers maintain proper positions in their saddles. No leader can properly supervise his unit by always riding in front of it. All leaders down to the squad leader should frequently ride on the flank and in rear of their units. At the halts, troop commanders should give their commands a general inspection, especially checking up on their subordinate commanders to see that they are functioning properly. The inspection by the platoon leaders and platoon sergeants should

be more in detail. The squad leader, after first inspecting his own horse and equipment, inspects each horse of his squad and demands that each trooper properly prepare his horse and equipment for the next march period. An examination of the feet of each horse by its rider should be made at every halt.

b. Maintenance of prescribed gaits and rates throughout each unit.

c. Changing of gait simultaneously and smoothly within each unit at command or signal.

d. Avoid changes of gait without warning to the unit concerned.

e. After crossing bad ground, maintenance of gait of crossing until rear of unit has cleared.

f. Observance of all traffic rules.

g. Dismounting when there is no necessity for remaining mounted.

h. Leading smoothly at prescribed distances.

i. Prevention of straggling and falling out except in cases of absolute necessity.

j. Instinctive practice of affording the horse every physical comfort available not inconsistent with the mission.

k. Observance of the proper methods of feeding and watering.

l. Police of halting places, bivouacs, and camps.

316. Forced marches.—*a.* It is desirable not to exceed 50 miles per day in making forced marches of 3 or more days' duration, although, when the situation demands, 100 miles can be made in 24 hours.

b. In long, forced marches, hourly halts are made the same as usual. In addition, a halt of at least 2 hours is made approximately at the end of the first half of each day's march, during which horses are unsaddled and fed, their backs and legs are massaged and they are given an opportunity to lie down and roll. If possible, the horses should be watered from 15 to 30 minutes before this halt. Toward the end of long marches, the condition of the horses may require leading all of the time except when the command trots.

MECHANIZED CAVALRY

317. General considerations.—*a.* The situation permitting, mechanized marches are always conducted on the best available

roads. A mechanized command will arrive quicker and in better condition after a longer march on good roads than it will by taking a short cut over poor roads.

b. The commander or his designated representative controls and leads the march of mechanized cavalry. He establishes the rate of march to which all elements conform. It is the responsibility of each subordinate troop commander to conform to the leadership of the column commander, maintaining contact with the troop next in front and following it at a certain prescribed distance.

c. The troop is the march unit. Control is exercised by example, by staff officers, by motorcycle messenger, or by radio.

d. Under average conditions, normal distances between troops are from 500 to 800 yards. This is sufficient distance to permit the troops to avoid the whip of the preceding organization. This distance may be reduced materially for very slow rates of march, particularly in congested areas.

e. Distances between vehicles, except for security or reconnaissance elements, are from 25 to 50 yards under average marching conditions. This distance is increased for special vehicles or high speeds. For slow speeds it is decreased, the minimum being the distance necessary to prevent collision.

318. Preparation.—In preparation for a march, all vehicles are serviced, tools and spare parts checked, and extra gasoline and oil loaded.

319. Rates and lengths of marches.—*a.* The average daily march of mechanized cavalry on good roads is 150 miles.

b. The average rate of march on good roads including routine halts is 25 miles per hour.

c. Halts are made near the end of the first hour and thereafter about every 2 hours. Halts are from 10 to 20 minutes in duration to provide time for inspection of vehicles.

320. Forced marches.—Fatigue from driving combat vehicles is much greater than that resulting from driving commercial passenger cars. Therefore the length of marches is adjusted to meet the demands of rest for personnel as well as for proper servicing and maintenance of vehicles. Forced marches, with changes of drivers, can be made under similar conditions of fatigue and failure of mounts as is expected in horse cavalry commands. For a short period of time, mechanized cavalry

on a forced march can average 30 miles or more per hour. If necessary, it can also increase the number of marching hours in each 24-hour period.

321. Discipline.—*a.* Troops normally march at route order.

b. At halts, all personnel keep to the right of the road except traffic control men or patrols posted for security.

c. Traffic control is a troop function and is carried out as far as practicable by motorcyclists.

d. Straggling and falling out will not be permitted except in cases of absolute necessity.

e. Vehicles, other than command cars and motorcycles, which have lost their place in column rejoin their organizations during the halt. No vehicles of a mechanized command other than command cars and motorcycles pass a column while it is in motion.

f. In case a vehicle becomes a casualty on the march, it immediately clears the road and signals vehicles in its rear to pass in order not to interrupt the march of the column.

322. Maintenance.—*a.* Roadside repairs are performed by the troop and higher echelons of maintenance. In order that the troop maintenance may be present with its troop at every halt, its assistance is limited to very minor repairs which do not require more than a few minutes. Anything more serious is left for the higher echelons which follow.

b. Commanders cannot neglect their commands by personally concerning themselves with occasional vehicular casualties. This is a responsibility of the echelons of maintenance.

323. Night marches.—On account of the need for surprise, night marches may be expected as normal. Night marches are carried out the same as marches by day with the following exceptions:

a. The rate of march is reduced depending on the degree of darkness.

b. Distances are reduced in conformity with the rate of march.

c. If secrecy is desired, no lights of any description are exposed.

324. Messing and refueling.—Messing and refueling on the march are accomplished by halting the vehicles of the column and bringing the kitchens and fuel trucks forward to the halted

column. When halting, sufficient space is left between certain combat vehicles for the kitchens and fuel trucks.

325. Trains.—Trains are consolidated and march in rear of the combat elements at such distance as may be prescribed.

SECTION II

MOVEMENTS BY MOTOR TRANSPORT

326. Scope.—This section considers only the equipment and the tonnage requirements involved in a move of cavalry by motor transport. The logistical principles that must be considered, the plans that must be made, and the data that must be determined to effect these plans in the case of movements by motor transportation are covered in Staff Officers' Field Manual, part one.

327. Equipment.—*a.* The movement of cavalry units by motor transport requires trucks or trailers designed or modified for the transport of horses. 2½- and 3-ton cargo trucks, provided with special sides, removable kicking bars, and loading ramps, may be used.

b. The extensive use of civilian livestock trucks and trailers provides an emergency source of transport for cavalry movements in this country. In using civilian vehicles, special consideration will have to be given to their varying capacity and speed and to their control in convoy formation.

c. A motor transport company has 48 trucks available for the transport of cargo or troops, plus 5 spare trucks and 1 truck for company baggage, a total of 54 trucks.

d. The organic motor transport within the cavalry division is not suitable for the transport of cavalry.

328. Tonnage requirements.—*a.* Personnel and matériel moved by motor transport require trucks as follows:

(1) Troops with individual equipment and arms only: 15 men per 1½-ton truck; 30 men per 2½- or 3-ton truck.

(2) Horses, riding or draft: six per 2½- or 3-ton truck.

NOTE.—Six men with individual equipment, arms, and saddle equipment for six horses are transported on each truck in addition to the animals.

(3) Horse, pack (except caliber .30 and caliber .50 machine-gun units): five per 3-ton truck.

(4) Caliber .30 and caliber .50 machine-gun units: 1 squad (7 men, 7 horses, riding, and 3 horses, pack) is loaded on 2 trucks as follows: 6 horses on No. 1 truck; 4 horses, including 3 pack horses, packs, and loads on No. 2 truck.

b. Table I shows the number of trucks required to transport a cavalry regiment. (All trucks are 2½- or 3-ton.) While changes in organization, reduction in strength, and absentees will necessitate changes in this table, it is inserted here as a guide for commanders and supply personnel who will find it easier to make changes in the table than to prepare a new one.

TABLE I

War strength units	Personnel	Horses	Trucks, horses, riding	Trucks, horses, pack	Trucks, organ-ic ¹	Total ²
Rifle troop.....	132	153	23	3	2	27
Caliber .30 machine-gun troop.....	154	220	42	(3)	3	92
Caliber .50 machine-gun troop.....	122	171	33	(3)	3	33
Headquarters and headquarters troop.....	167	63	8	1	6	9
Cavalry squadron.....	403	469	71	9	6	80
Cavalry squadron reinforced by 1 caliber .30 machine-gun platoon.....	437	516	81	9	7	90
Attached medical and chaplain.....	59	74	13	-----	-----	-----
Cavalry regiment.....	1,740	1,935	309	28	30	337

¹ Not included in total required for movement. Should be included in computing road space and time length of column.

² Trucks, personnel, are not required, since personnel rides on trucks with horses.

³ Special loading for cal. .30 and cal. .50 machine-gun units.

⁴ Includes 2 trucks for squadron headquarters personnel and animals.

⁵ To this total should be added (included in computing road space): 10 scout cars; 1 semitrailer; 2 trucks, reconnaissance; 1 truck, kitchen; 1 truck, radio; 1 truck, maintenance (light repair); 1 ambulance, motor (each of the above to be computed as 1 truck); 14 trailers (length of trailer only to be computed).

⁶ To be furnished by corps, army, or GHQ.

Motorcycles not computed (ride in intervals).

SECTION III

MOVEMENTS BY RAIL

329. General instructions.—General instructions regarding movements by rail will be found in the Staff Officers' Field Manual, part one.

330. Special instructions.—*a. Horse cavalry.*—(1) *Preliminary arrangements.*—(a) Trains should be routed so as to provide feeding stations to accommodate the animals during shipment. These stations should be so located that animals may be watered and fed not more than 20 hours after the last load-

ing started. Animals must never be left on the train for more than 36 consecutive hours.

(b) Arrangements should be made to have feeding pens and yards cleaned, disinfected, and prepared to receive the animals.

(c) Train schedules should provide for a 5-hour undisturbed rest for the animals at each stopping point.

(2) *Loading animals.*—(a) Each car is loaded by four men, two in each end of the car. Animals are led to the car door and turned over to a man of the loading detail. He quietly leads the horse to its place in the car and stands by its head until the next horse is in position alongside. Horses, except teams, are placed alternately head and tail. Teams stand together as when hitched. As soon as each animal is in place the tie rope is unsnapped and passed out of the car. Tie ropes are sacked and conveniently placed. If feed bags are to be used during the journey they are removed from the saddles, sacked, and conveniently stored.

(b) The door on the far side of the car must be securely fastened before loading commences.

(c) Hay is spread along each side of the car prior to loading and floors are sanded.

(d) When the loading of animals has been completed, car doors are securely fastened. Sacked individual equipment is loaded by squad or platoon. Stacks are then broken and the men, carrying their equipment, enter the cars.

(3) *Care of animals en route.*—(a) During stops, inspections should be made of the train to see that the animals are in proper condition.

(b) Before unloading animals at feeding points, mangers and water troughs in the corrals are emptied, inspected, and if necessary cleaned and disinfected, then refilled with fresh water.

(c) While in the corrals the animals should have hay constantly before them.

(d) Stock cars should be cleaned out and fresh hay put in before reloading.

(4) *Unloading.*—Doors of stock cars are kept closed until the car to be unloaded comes to a full stop opposite the unloading point. Each animal is led so that its body is perpendicular to the door before it starts to leave the car.

(5) *Use of tables.*—Tables for the movement of a regiment of horse cavalry follow below. Like table I they are to be considered as guides only.

TROOP MOVEMENT BY RAIL, CAVALRY REGIMENT (HORSE)

TABLE II--A^e
Special trains for a movement by organization

Transportation groupings	Number of cars of each type					Number of cars of trains in regi- ment	T/O
	Tourist sleeper	Baggage or box	Flat	Stock	Kitchen	Caboose	
1. Regt. hq., hq. tr., and band ^a -----	5	1	14	6	1	1	1 423T-424T.
2. One sq. hq., one R tr. ^b -----	4	1	2	8	1	1	3 426T-428T.
3. One R tr. ^c -----	3	1	2	8	1	1	6 428T.
4. Cal. 30 MG tr. ^d -----	4	1	4	11	1	1	1 430T.
5. Cal. 50 MG tr. ^e -----	3	1	2	8	1	1	1 429T.

Total number of trains, 12.

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TABLE II--B^e
Special trains for a movement by regiment

Transportation groupings	Number of cars of each type					Number of cars of trains in regi- ment	T/O
	Tourist sleeper	Baggage or box	Flat	Stock	Kitchen	Caboose	
1. Regt. hq., hq. tr., band, hq. cal. 50 MG tr.-----	5	1	16	7	1	1	1 31
2. One sq. hq., two R trs., one plat. cal. 50 MG tr.-----	7	1	3	17	1	1	3 30
3. One R tr., cal. 30 MG tr.-----	7	1	5	17	1	1	1 32
4. Two R trs.-----	6	1	3	15	1	1	1 27

Total number of trains, 6.

TABLE II-C motor elements move by marching)¹
Special type trains for a movement by regiment

1. Regt. hq., hq. tr., cal. .30 MG tr., ca., .50 MG tr.	8	1	23	1	1	34	1
2. One sq.-----	9	1	22	1	1	34	3

Total number of trains, 4.

* Includes 4 officers, 26 enlisted men, and 39 animals of attached medical.

* Includes 2 truck drivers from hq. troop, 1 officer, 3 enlisted men, and 4 animals of attached medical.

* Includes 2 truck drivers from hq. troop, 2 enlisted men, and 2 animals of attached medical.

* Includes 3 truck drivers from hq. troop, 1 officer, 3 enlisted men, and 5 animals of attached medical.

* All cargo vehicles carry normal loads. Armament and ammunition of scout cars and trains are carried in a baggage or box car. Three packs, with harness, are carried in each light wagon, trailer type.

* All vehicles carry normal loads and personnel. One officer and 6 enlisted men of attached medical move overland in motor vehicles. One master sergeant, 1 technical sergeant, and 1 clerk move by rail.

b. Mechanized cavalry.—(1) *Preliminary arrangements.*—Special loading equipment must be placed at entraining points prior to the arrival of troops. Loading from end platforms is preferable.

(2) *Use of table.*—A table for the movement of a regiment of mechanized cavalry follows below. Like tables I and II, it should be considered as a guide only.

TABLE III
Special type trains

Transportation grouping	Number of cars of each type					Number of trains in regiment	T/O
	Tourist sleeper	Box ^d	Baggage ^d	Flat	Kitchen	Caboose	
1. Regt. hq., hq. tr., band, attached Med. ^a -----	3	1	2	12	1	1	423P.
2. Serv. troop ^b -----	2	1	1	27	1	1	424P.
3. AC troop ^c -----	3	1	1	25	1	1	425P.
4. MG troop-----	4	1	1	16	1	1	414P.
5. CC squadron-----	4	1	1	20	1	1	430P.
						2	426P.

^a Detachment from regimental headquarters and headquarters troop is grouped with armored-car troop as follows:

Forward echelon: 5 officers, 23 enlisted men, 1 combat car, 2 armored cars, 2 scout cars, 8 motorcycles.

^b Detachment from service troop is grouped with armored-car troop as follows: 11 enlisted men; 3 trucks, 2½-ton, ammunition; 6 trucks, 2½-ton, gas and oil.

^c Armored-car troop is grouped with detachments of headquarters, headquarters troop, and service troop.

^d One for each organization: Box cars for gasoline, oil, tools, and equipment; baggage car for baggage and ammunition.

SECTION IV

CAMPS AND BIVOUACS

331. General considerations.—*a.* Troops are in bivouac when resting on the ground covered by shelter tents or hastily improvised shelter or without any overhead cover. Full utilization is made of woods, houses, etc., to afford concealment. A bivouac with proper distribution of men, animals, and motor vehicles facilitates tactical control and readiness for action while presenting a poor target. It is, however, undesirable from the viewpoint of comfort, rest, and protection from the weather, and is therefore resorted to only when required by tactical conditions.

b. Troops are in camp when sheltered by tentage other than shelter tents or quartered in huts or other temporary structures especially erected for military purposes. Camps facilitate control of the troops and administration but are not practicable for the shelter of units engaged in active operations; their use in the theater of operations is mainly restricted to the communications zone. In stabilized situations, they may be used to a limited extent in rear areas of the combat zone. Where a camp site is to be used for a prolonged period, cantonments are more economical than tent camps, due to the rapidity with which tentage becomes unserviceable.

332. Special considerations.—The general location of camps and bivouacs is determined by service requirements. Within the limitations fixed by the objectives of the troops, every consideration is given to the requirements of sanitation, administration, and supply, and to the comfort of the command. The following tactical considerations are of special importance:

- a.* The mission of the command.
- b.* General formation of the command in camp.
- c.* A suitable position for security.
- d.* Roads, at least one and preferably several, to front and rear.
- e.* Concealment and cover.
- f.* Fields of fire.
- g.* Natural obstacles.
- h.* Hard standings for vehicles.

333. Choice of camp site.—The commander may have a mission that ties him closely to a particular point. The liability

and possible direction of attack by the enemy and the direction of the move the next day are considerations that influence the choice of a camp site.

334. The command in camp.—*a.* Troops engaged in active operations are arranged in camp so as to facilitate the prompt employment of the troops first needed and to insure sufficient time for the preparation for action of the troops requiring the most time. If no serious action is contemplated during the halt, the fractions of the command should be so camped as to facilitate the resumption of the next day's march. In small commands

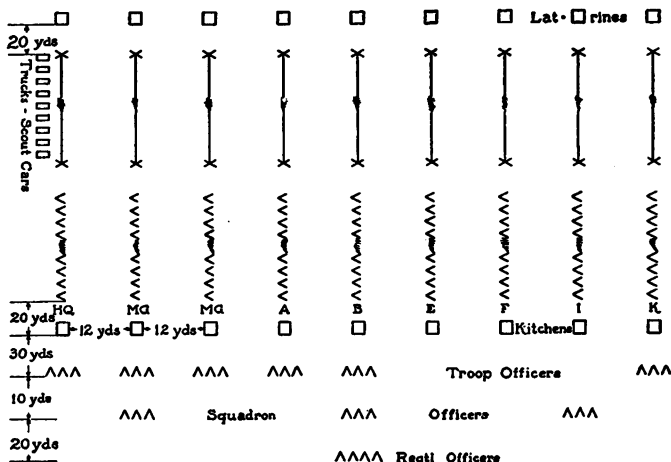


FIGURE 2.—Shelter tent camp, regular formation.

the trains are normally released to organizations. In commands the size of a brigade or larger, the trains are generally grouped in a train bivouac. The headquarters of the unit is so located that it can be easily found.

b. When troops are in shelter at such distance from the enemy that the possibility of contact with any enemy forces is eliminated, administrative arrangements and comfort of the command govern the formation. When the tactical situation permits, units should be able to enter and establish a shelter tent camp without confusion. To accomplish this, the commander

of a unit or his representative precedes the command for the purpose of making a reconnaissance of the camp site and assigning areas to each major unit. Camping areas are assigned by the regiment to its squadrons and by the squadrons to its troops. When the ground is suitable, and it is neither desirable nor necessary to take advantage of overhead cover, the troop habitually camps as a unit; otherwise, the troop commander assigns camping areas to each platoon and to the troop headquarters. Likewise the platoons and troop headquarters may find it necessary or desirable to assign areas to sections and squads. Upon approaching the camp site, representatives for all units the size of a troop, or larger, are sent forward and are informed of the location of the camp sites of their respective units and the formation in which units will camp; and, if desirable, the location of picket lines, motor parks, kitchens, latrines, and other facilities. Upon the arrival of the command, the unit representatives meet their respective organizations, guide them to their camping places, and transmit all instructions received.

c. Regiments and smaller units will frequently have sufficient room to pitch shelter tents in regular formation unless it is necessary or desirable to take advantage of overhead cover. When regular formations are used, the regiment and squadron pitch shelter tent camp in column of troops, each troop in line.

d. Figure 2 illustrates the manner in which the regiment pitches shelter tent camp in a regular formation.

HORSE CAVALRY

335. Formations.—When regular formations are used, the units of the regiment are generally arranged from front to rear in the order: Headquarters troop; machine-gun troop, caliber .30; machine-gun troop, caliber .50; first squadron; second squadron; third squadron. Rifle troops within each squadron are arranged in alphabetical order. This order may be modified. Headquarters troop should be provided with suitable standing; preferably hard roads for its motor equipment.

336. To pitch shelter tents.—*a.* The troop is the largest organization which pitches shelter tent camp as a unit by formal prescribed commands.

b. (1) The troop commander dismounts his troop in close proximity to the place where the picket line is to be located and

directs the stable sergeant to establish the picket line, indicating its exact location and whether it will be a ground or raised line. The stable sergeant, assisted by the horseshoers and saddler, then establishes the picket line.

(2) As soon as the picket line has been established, the troop commander directs the first sergeant to have the troop pitch shelter tents. The first sergeant causes the horses to be tied on the picket line in order from right to left as follows: Rifle platoons in numerical order, light machine-gun platoon, troop headquarters.

(3) Cattle rolls are then removed from all riding animals and pack loads from all pack animals. The pack loads are arranged in line approximately 8 yards from, and parallel to, the near (or rear) side of the picket line.

(4) The troopers, carrying their rifles and with their cattle rolls over their left shoulders, are then formed in line, approximately 5 yards in front of the line where shelter tents are to be pitched. Rifles are stacked. The troop is arranged in the following order from right to left: First sergeant's tent mate; rifle platoons in numerical order; the light machine-gun platoon; remainder of troop headquarters. In each platoon, the platoon sergeant and sergeant file closer form on the right.

c. While the troop is pitching shelter tents, the troop officers supervise the establishment of the camp.

d. Machine-gun troops and headquarters troop follow the method prescribed above and vary only insofar as their organization demands.

e. For instructions in detail as to pitching shelter tents, see Cavalry Field Manual, volume I.

337. Antiaircraft formation.—Whenever danger of observation by enemy aircraft is present, the following measures should be taken for the security of shelter-tent camps:

a. Tents should never be pitched in precise regular rows.

b. Shelter tents should be disposed habitually in an irregular manner with respect to each other, and the groupment of tents should be of irregular outline.

c. Full use should be made of available cover, both natural and artificial, in order to minimize the visibility of tents to an aerial observer. Wooded areas are preferable to open spaces.

d. Tents pitched in the open should be placed upon an irregular and broken background, and backgrounds of uniform appearance and color should be avoided.

e. Tents pitched in localities where they are in direct sunlight should have their long axes approximately in the direction of the sun.

f. Tents left in place in open spaces during the daytime should, when not occupied, have poles dropped to collapse the tents and eliminate shadows.

MECHANIZED CAVALRY

338. Choice of camp site.—*a.* An area 900 yards square is of suitable size for the camp of a regiment of mechanized cavalry.

b. At least two good routes of exit should be available.

c. Hard standing is desirable for all vehicles. Whenever possible, hard standing is provided for the maintenance platoon.

d. Personnel may frequently bivouac in the immediate vicinity of their vehicles.

e. Normally vehicles are parked in a line of columns. Sufficient distances or intervals are left between vehicles to permit moving individual vehicles.

339. Formations.—The tactical situation may dictate the formation in camp.

CHAPTER 2

SUPPLY

SECTION I

CLASS I SUPPLY

340. General.—For principles governing operation of supply in divisions, see sections II and III, chapter 5, part two, Staff Officers' Field Manual.

341. Horse cavalry.—*a. Prescribed loads within the cavalry division.*—Present regulations prescribe that the following class I supplies be kept within the cavalry division at all times:

PREScribed LOADS AND CAPACITIES OF CLASS I SUPPLIES IN DAYS OF SUPPLY FOR A CAVALRY DIVISION

Carried by (or for)	Reserve ration (individual)		Field ration (A or B)		Grain ^a		Gasoline and lubricants ^b		Fuel oil or wood	
	PL ^c	Cap	PL	Cap	PL	Cap	PL	Cap	PL	Cap
Each individual.....	1	1								
Each troop for its own use ^d			1	1	2	2	2	2	1	1
Division, for entire division ^e			1	1	1	1	1	1	1	1
Total in division.....	1	1	2	2	3	3	3	3	2	2

^a For all animals.

^b For all motor vehicles.

^c PL—Prescribed loads. Cap—Capacity, loads.

^d Includes supplies carried on individual or combat train.

^e May be carried on individual, ration pack, or wheeled elements of combat train.

^f Part may be carried on animal and combat train or all may be carried on combat train.

^g Includes gasoline and lubricants in vehicle operating tank and in container.

^h Not a rolling reserve but for next succeeding issue.

b. Distribution.—(1) The daily train load of class I supplies for the cavalry division, based upon the standard American box car, consists of the following:

Bread.....	1 car.
Meat.....	$\frac{1}{2}$ car.
Vegetable component of the ration.....	$\frac{1}{2}$ car.
Smaller components of the ration.....	$\frac{1}{2}$ car.
Grain (oats).....	2 cars.
Hay.....	4 or 5 cars.
Fuel.....	$\frac{1}{2}$ car.
Gasoline and lubricants.....	1 car.
Total.....	10 or 11 cars.

(2) Two or more hours will be required for sorting and unit loading of one day's class I supplies for a cavalry division at the railhead. The actual time will depend upon the loading facilities at the railhead.

(3) The minimum time for class I distribution, cavalry division, is as follows:

(a) *Field rations, grain, and wood.*

<i>Method</i>	<i>Minimum time allowed</i>
Railhead distribution to trains of entire division.....	6 hours.
Distribution to brigade at one distributing point.....	1 hour.
Distribution to regiment or division special troops at one distributing point.	$\frac{1}{2}$ hour.
Distribution to battalion, squadron, or smaller separate unit at one distributing point.	$\frac{1}{4}$ hour.

(b) *Gasoline and oil.*—The time allowed for the distribution of a day's supply of gasoline and oil assumes that all tank or cargo trucks making delivery are being unloaded at the same time. Railhead distribution requires 6 hours for the whole division. Distribution of gasoline and oil may be made simultaneously with other class I supplies.

(c) *Hay.*—When hay is distributed in conjunction with other class I supplies, one-half hour additional is necessary for each cavalry or artillery regiment. There is no change in the times allowed for distribution to other units. When hay is distributed separately from other class I supplies, allow one-half hour for each cavalry or artillery regiment and one-fourth hour for other separate units drawing hay.

342. Mechanized cavalry.—*a. Prescribed loads with the regiment.*—(1) Present regulations prescribe that the following class I supplies be kept within the mechanized cavalry regiment at all times:

PRESCRIBED LOADS AND CAPACITIES OF CLASS I SUPPLIES IN DAYS OF SUPPLY FOR A MECHANIZED CAVALRY REGIMENT

Carried for (or by)—	Reserve ration (individual)		Field ration (A or B)		Gasoline and lubricants ^a		Fuel	
	PL ^b	Cap ^b	PL	Cap	PL	Cap	PL	Cap
Each individual.....	1	1						
Each troop for its own use.....			1 ^c	1 ^c	1 ^d	1 ^d	1 ^e	1 ^e
Regiment.....	1	1	1 ^e	1 ^e	1 ^e	1 ^e	1 ^e	1 ^e
Total in regiment.....	2	2	2	2	2	2	2	2

^a For all motor vehicles.

^b PL—Prescribed loads. Cap—Capacity.

^c Carried in troop kitchen.

^d Carried in vehicle tank.

^e Carried in supply section of regimental combat train.

(2) In addition to the supplies carried by the regiment there will be carried by the service train of the force of which the mechanized regiment is organically a part—

1 field ration (A or B).

1 day's supply of gasoline and lubricants in containers or tank trucks.

1 day's supply fuel.

b. Distribution.—(1) The actual time for sorting and unit loading of one day's class I supplies will depend upon the loading facilities at the railhead.

(2) The minimum time for class I distribution is as follows:

Method	Minimum time allowed
Railhead distribution to entire brigade.....	2½ hours.
Distribution to regiment or at one distribution point.....	½ hour.
Distribution to smaller separate units at one distributing point.....	¼ hour.

c. Issue.—(1) *Rations.*—(a) Normally one truck of the combat train transports one reserve ration for each individual in the regiment and two trucks transport the field ration.

(b) Issues are made direct to the troop kitchen section, either at the train bivouac or at a point designated by S-4, to which the kitchen section reports. In either case the two trucks transporting the daily replacement of field rations, after disposing of the daily issue, move to the distributing point or railhead by groups with trucks of the gasoline and oil and ammunition section (if these components of the class I supply and class IV supplies need replacing and have been requested). At the distributing point the ration section refills with class I supplies which have been brought forward by service trains or have arrived on the daily train.

(c) There is sufficient available cargo capacity on the two ration trucks to transport additional supplies, such as motor maintenance supplies, which are needed and are available at distributing points.

(2) *Gasoline and oil.*—(a) On the march or in bivouac, gasoline and oil are issued to the troops at the troop bivouac, or at the halt. Full containers of gasoline and oil are issued; empty containers are picked up to be returned to railheads or distributing points or are discarded.

(b) When contact with the enemy is established, gasoline and oil are issued to the troops by designating unit dumps. The gasoline section dumps sufficient gasoline and oil for the units to be served at each dump. Replenishment by combat vehicles is made by individual or small groups of combat vehicles at the dumps or by using the troop repair trucks to transport gasoline and oil from the dump to the combat vehicles. Dumps should be advanced as close to combat units as the situation will permit. In some cases troop personnel may be required to carry gasoline and oil containers from the dump to their vehicles.

SECTION II

AMMUNITION SUPPLY

343. General.—For data and principles governing ammunition supply, see chapter 1, and sections II and III, chapter 5, part two, Staff Officers' Field Manual.

344. Horse cavalry.—a. *Amount.*—The amount of ammunition carried within the cavalry division is as specified in Tables of Basic Allowances.

b. Reserve.—The reserve of ammunition carried on the service train of the cavalry division consists of approximately sufficient ammunition to refill the combat trains of the division. When subordinate units of the division are detached, sufficient transportation should accompany them to transport the unit's proportionate amount of reserve ammunition.

c. Distributing points.—(1) Distributing points for ammunition should be centrally located with reference to the units served, well forward for offensive action, and in rear of and in proximity to the regimental reserve line in defensive situations.

(2) Distributing points for ammunition should be on good turn-arounds to permit supply by motor transportation and, if possible, protected from hostile fire and aerial observation.

(3) In dismounted actions or in a combination of mounted and dismounted action, distributing points will be designated to serve the dismounted attacks, usually one to a brigade. In other actions distributing points for ammunition are provided as the tactical and supply situation requires.

(4) The number of distributing points should be kept to a minimum. In many situations one distributing point will be sufficient. In many situations the distributing points for small arms and artillery ammunition will be established in the same locality separated only a short distance as a safety precaution.

d. In advance of distributing points.—(1) The loads of the combat trains of the organizations constitute the reserve of ammunition. Combat trains should always be kept filled with the prescribed allowance.

(2) When action is imminent, the cavalry bandoleer (60 rounds) normally carried on the combat train may be issued to troopers to be carried around the neck of the horse or carried by the trooper when he is dismounted. Combat trains should be loaded to capacity.

(3) Prior to beginning an action, the combat trains, if grouped under control of higher authority, should be released in order that the first reserve of ammunition will be available to the troops.

(4) During an engagement, the light wagons and, if the situation permits, the supply section of the regimental combat train

will operate between the distributing points and the units, under control of the unit supply officer.

(5) Light wagons, pack animals, led horses, or carrying parties are used to forward ammunition replacements to the firing line.

345. Mechanized cavalry.—a. Amount.—The amount of ammunition carried within the regiment is as specified in Tables of Basic Allowances.

b. Reserve.—The reserve of ammunition is carried by the service trains of the higher unit of which the mechanized cavalry is a part. When regiments or smaller units are detached from their higher units a proportionate part of the service trains with ammunition reserves should accompany them.

c. Distributing points.—Distributing points for ammunition are established by the service elements with the mechanized cavalry. The number of such distributing points should be kept to a minimum. Combat trains operate between the distributing points and the units under the control of the unit supply officers. In emergencies, combat trains may operate between their units and ammunition refilling points.

d. In advance of distributing points.—(1) Combat vehicles and combat trains should always have their prescribed loads of ammunition.

(2) In a moving situation, combat vehicles may replenish their ammunition supply by the following methods:

(a) Any available vehicle of an organization may obtain ammunition from the ammunition section of the combat train at the service park and deliver it to the combat vehicle.

(b) Combat vehicles may return to the combat train for ammunition.

(3) In a fixed situation, combat vehicles may replenish their ammunition supply by the following methods:

(a) The combat train may establish troop ammunition dumps from which ammunition may be sent forward.

(b) An ammunition distributing point may be established in the vicinity of the service park by the combat train, from which ammunition may be sent to the combat vehicles.

(c) The ammunition section of the combat trains will not normally remain either at the troop dumps or at the service park but will contact these points so as to insure adequate ammunition supply.

(d) The possibilities of ammunition supply to mechanized cavalry by air transport, must not be overlooked.

SECTION III

ENGINEER AND SIGNAL SUPPLY

346. Engineer supply service.—*a.* Engineer service is performed by the engineer troops which are a part of or are attached to the cavalry.

b. The commanding officer of the engineer troops is also the engineer officer on the staff of the cavalry commander. The supply officer of the engineer troops likewise performs the duties of the engineer supply officer for the cavalry.

c. The engineers establish and operate the engineer dumps and distributing points for engineer supplies when they are required. Engineer tools and supplies are carried in the trains of the engineers for use of all of the cavalry of which it is a part.

347. Signal supply service.—*a.* The signal service is performed by the signal troops which are a part of or are attached to the cavalry.

b. The signal service operates a supply service for the use of the subordinate units. It likewise establishes dumps or distributing points when required.

SECTION IV

TRAINS AND CARGO TRANSPORTATION

HORSE CAVALRY

348. Types and characteristics.—*a.* The types of cargo transportation assigned to units of the cavalry division are—

(1) *Pack animals.*—The total load carried is about 250 pounds per animal, of which about 200 pounds is available for cargo purposes. For long marches this useful load should be decreased. The rate of march is the same as for mounted troops.

(2) *The light wagon, trailer type.*—The light wagon is an animal-drawn vehicle, trailer type. It is drawn by four horses, if the occasion demands, but is normally trailed behind a truck. As an animal-drawn vehicle it has the same rate of march as

mounted troops and as a trailer it can be transported at normal truck speeds. Its total useful cargo capacity is 1,500 pounds. Each light wagon has three pack saddles as part of its equipment, so that in an emergency three horses may be used as pack horses for transporting supplies, normally ammunition.

(3) *The artillery caisson.*—The caissons of the artillery combat train are animal-drawn vehicles similar to the caissons with the guns. They have the same rate of march as mounted troops and can keep up with the marching columns of artillery.

(4) *Motor transportation.*—Motor trucks have replaced the escort wagons for general-cargo duty within the cavalry division. Except in special cases, the 1½-ton four-wheel drive truck is the standard cargo vehicle. Other motor transportation consists of cargo trucks of ¾-ton capacity, semitrailers of 3-ton capacity, tank trucks of 500-gallon capacity, and other special purpose trucks of 2- to 5-ton capacity. Except when suitable roads are not available or when the terrain is unsuitable, motor transportation moves at a greater rate than mounted combat troops.

b. The various types of transportation mentioned in *a* above are combined to form the combat and service trains of the cavalry division.

349. *Combat trains.*—The following table shows the cargo vehicles of the combat trains of the cavalry regiment:

Type	Rifle troop	Caliber .30 MG troop	Caliber .50 MG troop	Head-quarters troop	Total regiment
Pack animals.....	6	16	4	-----	74
Light wagons.....	1	2	2	-----	13
Trucks, cargo, 1½-ton.....	-----	-----	-----	32	32
Semitrailer, 3-ton.....	-----	-----	-----	2	2

a. *Rifle troop.*—(1) Loads for the six pack horses are:

2 carry the kitchen packs.

2 carry the ration packs (one-third of field ration capacity).

2 carry light machine-gun ammunition (1,800 rounds each).

(2) The light wagon transports the remainder of the troop reserve of ammunition and about 350 pounds of combat equipment.

b. Caliber .30 machine-gun troop.—(1) Loads for the pack horses are:

2 carry the kitchen packs.

2 carry the ration packs (one-third field ration capacity).

12 carry machine-gun ammunition (1,250 rounds and one water chest each).

(2) The light wagons transport the remainder of the troop reserve of ammunition and about 130 pounds of combat equipment and supplies, including fire-control and direction instruments, belt-loading equipment and spare parts.

c. Caliber .50 machine-gun troop.—(1) Loads for the pack horses are:

2 carry the kitchen packs.

2 carry the ration packs (one-third field ration capacity).

(2) The light wagons transport the troop reserve of ammunition and about 20 pounds of combat equipment and supplies.

d. Headquarters troop.—The combat train of headquarters troop consists of one kitchen truck, 1½-ton, which transports the kitchen equipment and the field ration for headquarters troop.

e. Other cargo vehicles.—The remainder of the cargo motor vehicles comprise the regimental combat train and consist of—

(1) *One truck, 1½-ton maintenance, light repair.*—This truck carries the regimental maintenance personnel, spare parts, tools, and motor supplies.

(2) *Two semitrailers, 3-ton.*—These trucks are available for the transport of animals, gun or rifle squads, or extra cargo, particularly hay.

(3) *Thirty trucks, 1½-ton.*—Total capacity, 45 tons. These trucks are divided into the following sections:

(a) *Baggage section.*—Thirteen trucks are in this section which carries the baggage and equipment for regimental headquarters and each troop. Sufficient cargo capacity is available to transport the canteen rolls of all mounted men in the regiment. This section is generally not immediately needed in the combat area but is essential to the regiment in bivouac or camp.

(b) *Supply section.*—Seventeen trucks are in this section, which transports the regimental reserve of grain and the reserve of gasoline and oil for the scout cars and motorcycles. If wood is carried it can be transported by this section. It also transports the reserve ammunition for regimental headquarters, band, and headquarters troop, including the scout-car platoon. There is available cargo capacity to transport one field ration or two-thirds of a grain ration, for supplies for attached personnel, and ammunition which is normally carried on pack horses in the troops. Two trucks transport the band and their personal equipment.

350. *Service trains.*—a. The service trains of a cavalry division consist of all cargo vehicles, ambulances, and pack transportation organically part of the service troops of the division or attached thereto. The functions of the service trains are to distribute supplies to the division, to transport the rolling reserve of ammunition and the succeeding issue of class I supplies, and to furnish transportation to the division as needed. In case of conflicting demands for available transportation, priorities are established by the division commander through the Assistant Chief of Staff, G-4.

b. The division service trains thus act as a pool for the necessary transportation needs of the units of the division. In case any unit of the division is separated from the division, a proportionate share of the division service trains accompanies the unit. This may be truck or pack transportation, or both, as the situation demands. The service trains allotted to a detached unit transport their proportionate share of the division supplies. This is essential, as a combat unit of the cavalry division would become a burden upon the supply element of the unit to which it is attached if service trains were not to accompany it.

c. The maximum distance over which a division can be supplied continuously by its own transport depends on roads, weather conditions, loads, condition of transport, and the length of time over long distances that supply is necessary. Motor transportation, under reasonable conditions, can cover 120 to 150 miles a day continually and as much as 200 miles a day for short periods.

351. Employment of trains.—a. General.—(1) The combat trains of the regiment of cavalry are the means of transporting the supplies, equipment, baggage, and ammunition which are essential to the regiment in combat and for the care of animals and equipment and comfort of the personnel.

(2) The motor elements of the combat train provide the regimental commander transportation for the required supplies and equipment, and furthermore increase the mobility of the regiment by transferring loads from the individual mount and the pack horse to motor transportation.

(3) In practice a definite number of trucks is allotted for the use of each troop for the transportation of the supplies and equipment belonging to that troop. However, the employment of the motor elements of the combat trains must be flexible to provide for varying situations. Thus the trucks form the regimental pool of motor transportation, to be assigned to troops, squadrons, or used by the regiment as a whole, as the situation demands.

b. Camp.—(1) When in camp or bivouac, the combat trains are normally with or near the organization whose supplies and equipment they are transporting.

(2) Service trains usually are camped in rear of the combat element adjacent to routes leading to supply establishments. The loads of the service trains may be dumped and the trains used for the transfer and issue of supplies or for other necessary employment.

c. March.—(1) The components of the trains of the cavalry division have varying degrees of mobility. All, however, can keep up with the marching columns of combat troops on normal marches.

(2) The pack transportation of the combat trains marches with the unit to which it pertains.

(3) The animal-drawn transportation of the combat trains may march with their units or may be grouped to march immediately in rear of the column without distance.

(4) Motor elements of the combat train will generally be grouped to follow the column by bounds in rear of the column or by separate routes. The baggage section may either accompany the column, move by bounds in rear of it, or remain at a location in rear to be brought up when desired. The supply

section either accompanies the baggage section or operates independently in moving to and from distributing points, refilling points, or the railhead.

(5) Pack trains generally will follow the column in rear of the animal-drawn combat trains and may keep up with the column when the rate of march does not exceed 5 miles per hour.

(6) The motor elements of the service trains, grouped by classes, may—

(a) Follow the column by bounds or move by separate routes.

(b) Complete the drawing of supplies at the refilling points or railhead and join the column in a new bivouac area in time to complete the next day's issue of supplies.

d. Battle.—(1) Cavalry must be ready for battle regardless of the fact that it may temporarily be separated from its trains.

(a) When all trains are present, supply arrangements for cavalry combat conform in general to the principles of supply.

(b) When all trains are not present and when contact with the enemy can be foreseen, the loading of the train elements which accompany the columns should be such as to facilitate the contemplated action.

(2) It is to be expected that cavalry engagements will not be of long duration. Attention will be directed principally to ammunition supply and to the evacuation of casualties. Usually the command will have with it sufficient ammunition and medical equipment to meet its needs. After an engagement has been completed and organizations are being reorganized, steps should be taken to provide for a resupply of ammunition.

e. Control of trains.—(1) In order to obtain the maximum efficiency from the command as a whole, it is necessary, in any situation, that the movement of the combat trains and service trains be coordinated with the movements of the combat troops. This coordination is essential to prevent these trains from unnecessarily delaying or hindering the activities of the combat units. If may be necessary to coordinate the movements of the various sections of the combat and service trains to prevent confusion and to insure priority of movement for those sections having important supply and evacuation duties. It is essential at times to restrict the movement of trains for the purpose of

preserving secrecy of operations. This coordination and restriction of movement is exercised by the commander of the unit through his staff (G-4 or S-4).

(2) When it is necessary for any part of the combat and service trains to operate in its usual functions of supply and evacuation, the trains are released to the control of the commander to whom they belong or to the chief of the supply service concerned. A released train must conform to all traffic instruction issued by higher authority.

(3) In general, trains move under the control of G-4 or S-4, and are released by him for operation whenever the situation requires.

(4) The division service trains must furnish transportation for class I supplies controlled by the division quartermaster; small-arms and artillery ammunition controlled by the ordnance officer; supplies of the other services by their representatives on the division staff; and for other miscellaneous duties. To meet the demands for transportation the service trains are operated as a divisional pool furnishing transportation as needed. In case of conflict among the various services, the priority and type of transportation and the manner of its loading must be announced by the commanding general through the assistant chief of staff, G-4, or in case of a smaller unit, by its commander through S-4.

352. Train defense.—*a.* For the protection of the motor elements of the regimental combat train, there are 12 caliber .30 light machine guns and 6 caliber .50 machine guns, in addition to the rifles and pistols which are carried by the operating personnel. They provide antiaircraft, antimechanization, and ground defense.

b. In friendly territory or when closely following the main body, these weapons should provide sufficient train defense. In enemy territory or when moving at a distance from the main body, this defense may be augmented by the detail from the main body of riflemen, machine-gun crews, or scout cars.

MECHANIZED CAVALRY

353. Combat train.—The various trucks used for the transportation of supplies and all other transportation except combat vehicles and motorcycles of the mechanized cavalry regiment are classed as the combat trains.

354. Regimental train.—The regimental combat train is composed of the transportation and maintenance vehicles which function for the entire regiment.

355. Troop combat train.—The troop combat train is composed of the trucks organically assigned to troop headquarters of the various troops.

356. Echelons of combat train.—For supply arrangements and control, the combat trains are divided into a forward and rear echelon. Employment of vehicles in these echelons will depend upon the tactical and supply situation. Distribution of vehicles must be flexible and permit the proper functioning of the combat trains.

a. Forward echelon.—This echelon consists of the vehicles which are essential in preparing for combat and during combat :

(1) *Troop combat train.*—Troop repair trucks.

(2) *Regimental combat train.*—(a) Regimental maintenance platoon (less detachments), including—

Spare parts truck.

Repair trucks (maintenance platoon).

Wrecker.

(b) Radio repair truck.

b. Rear echelon.—This echelon is not usually immediately essential during combat and is usually consolidated under the command of service troop commander. In order to facilitate control, the vehicles carrying similar loads may be formed into sections as itemized below :

(1) *Troop combat train.*

Troop kitchen trucks.

Troop baggage trucks.

Troop passenger vehicles.

(2) *Regimental combat train.*

Transportation platoon.

Detachment maintenance platoon :

Battery charging truck.

Shop truck.

357. Employment of combat trains.—*a. Regimental combat train.*—(1) *Transportation platoon.*—Transportation platoon consists of the cargo vehicles for transporting ammunition and class I supplies, regimental headquarters passenger vehicles, and the regimental office truck.

(a) *Ration trucks*.—These trucks carry one day's reserve rations for the entire regiment and the field ration for the regiment for the next day's consumption. These trucks do not accompany the combat troops. If possible, issue of the field ration is made at the location of the kitchen trucks. During combat or when combat is imminent, issue is made to the kitchen trucks at an issue point designated by the regimental commander to which the kitchen trucks report. If distribution is not made to the regiment by service trains, the empty ration trucks may be used to draw rations at railhead or at a distributing point announced in orders of higher headquarters.

(b) *Gasoline trucks*.—These trucks carry one day's supply of motor fuel and lubricants for all vehicles. Normally, the gasoline trucks are in the bivouac of the rear echelon of the combat trains. When empty, they receive a refill of motor fuel and lubricants in small containers either at a distributing point established by a service train of higher units or exceptionally at a gasoline and oil railhead announced in the orders of higher headquarters. If motor fuel and lubricants are not issued to the regiment by the service trains of higher units, all or part of the gasoline trucks may be sent to the gasoline and oil railhead or to a distributing point to draw the necessary motor fuel and oil.

(c) *Ammunition trucks*.—These trucks usually remain at the rear echelon. When directed to issue ammunition, they either contact the troops direct or report to the service park to issue ammunition or to establish an ammunition dump or distributing point. Ammunition trucks are refilled at distributing points announced in administrative orders.

(d) *Regimental headquarters passenger vehicles*.—During combat these vehicles remain with the rear echelon; at other times they may be utilized by the headquarters personnel.

(e) *Regimental office truck*.—This vehicle remains constantly at the bivouac of the regimental combat train.

(2) *Regimental maintenance platoon*.—(a) The maintenance platoon as a unit marches at the rear of the column when the trains march with the combat elements.

(b) The rear echelon normally marches at the rear of the regimental combat trains when these trains march as a unit

and do not accompany the main body. At other times the rear echelon remains at the bivouac of the regimental combat trains.

(c) The forward echelon normally follows the main body until just prior to combat, when it establishes a service park, being joined thereat by troop repair trucks of the combat troops.

b. Troop combat trains.—(1) The troop combat trains may accompany their troops.

(a) *Troop repair trucks.*—These trucks accompany their troops at all times except during combat and are available for limited repairs. Prior to combat, they report to the service park, prepared to assist the maintenance platoon and to rejoin their troops after combat.

(b) *Troop kitchen trucks.*—These trucks are used for cooking en route and in camp or bivouac. They may be used to contact the transportation platoon for the purpose of drawing the next day's rations. In certain situations they may be sent forward to the service park or other designated points, from which points prepared meals may be sent forward to the troops. Seldom during a combat can these trucks contact their troops direct. Normally during a march, they will be released to the troops at meal time by the regimental commander. The kitchen truck of service troop will frequently be the only kitchen truck present at the rear echelon and therefore will ration all personnel thereat, irrespective of troop assignment.

(c) *Troop baggage trucks.*—The purpose of the troop baggage trucks is to transport organizational equipment, spare parts, cleaning and preserving supplies, baggage, and additional necessary supplies. In camp or bivouac they contact their troops; at other times they are habitually attached to the regimental combat train.

(d) *Troop passenger vehicles.*—During an advance to combat, these vehicles march with the rear echelon of the regimental combat train. They are released to their organizations upon orders of the regimental commander.

358. Train defense.—In order that the safety of the supply installations may not unduly concern the commander and cause him to deplete his fighting forces by assigning combat elements thereto for protection, the vehicles of the trains, for their own defense, are equipped with machine guns (both caliber .30 and

caliber .50). Furthermore, for reasons of security, they are usually assigned bivouac areas well removed from hostile threats.

SECTION V

SUPPLY OF SMALL UNITS

HORSE CAVALRY

359. The brigade.—The cavalry brigade when present with and a part of the cavalry division is not a link in the chain of supply and has no direct responsibility therefor other than for the brigade headquarters troop. When the brigade is detached upon an independent mission, a portion of the division trains will be attached in order that the brigade may function as a self-sustained unit. Under such conditions, the brigade functions in matters of supply and evacuation in the manner prescribed for the division. The brigade staff assumes the duties and functions usually performed by the general staff of the division. The necessary members of a provisional special staff may be detailed from appropriate and available members of the command. When the transportation of the brigade is grouped for march control or other purposes, the coordination and handling of the transportation and supplies contained therein will generally be under the supervision of S-4 of the brigade.

360. The regiment.—*a.* Except in situations wherein the cavalry is supplied by local procurement, the source of supply for the regiment is a distributing point, either when a part of the cavalry division, when acting independently, or when attached to another force. Distributing points for class I supplies and ammunition are as described in the preceding sections. Distributing points for other supplies will be as specially announced by higher headquarters when occasion demands.

b. Supplies for the regiment other than class I are requisitioned and procured by the regimental headquarters (S-4 section) from higher authority. Regimental requisitions are consolidated from requisitions or stated needs of the several troops of the regiment. When such supplies are received by the regimental supply section they are issued to the troops in accordance with their needs in a manner best suited to that

particular situation. The regimental supply section, as such, has no reserve of supplies.

c. For the purposes of administration and control, sections of the combat trains may be grouped under the control and supervision of the regimental supply officer for the drawing of ammunition from distributing points and exceptionally for the drawing of other supplies. When the transportation of the regiment is grouped for a march, bivouac, or other purpose, it is coordinated, supervised, and may be operated by the regimental supply officer. Squadron supply officers may be detailed as assistants to the regimental supply officer to assist in performing such duties. When transportation is grouped in several detachments, an officer should be in charge of each column. Arrangements in column of each grouping and within groupings should be such as to meet anticipated demands in the order of requirement.

d. The squadron, when a part of the regiment, is not normally a link in the chain of supply. When acting alone its supply functions, responsibilities, and methods are similar to those of the regiment.

e. Although the loading of transportation and the handling of supplies in troop units are functions of the troop commander, when a particular situation, tactical or otherwise, demands, the regimental or squadron commander may require a uniform method of loading the vehicles within his command in order to meet the requirements of that particular situation. In computing a uniform system of loading and in effecting supply plans, certain components of supplies are common to all troops of the regiment varying only in the weights according to the strength and basic allowance of the unit. The cavalry rifle troop is therefore taken as a basis in paragraph 361 which furnishes a guide for systematic handling of supplies with the organic cargo transportation of the regiment.

361. The rifle troop.—In the usual case of a daylight move, men and animals will have breakfast before leaving camp or bivouac. Supplies to be transported are as follows:

a. On the trooper and his mount.

1 reserve ration (individual).

1 cooked meal ($\frac{1}{3}$ field ration).

90 rounds caliber .30 ammunition (rifle) in trooper's belt.

21 rounds caliber .45 ammunition (pistol).

8 pounds of grain (unconsumed portion of 1 grain ration)
in grain bag.

b. On the ration packs.

1 meal ($\frac{1}{3}$ field ration).

c. On the ammunition packs.

3,600 rounds of caliber .30 ammunition, light machine gun.

d. The above accounts for the one day's field ration and one day's grain ration which were issued for the day's consumption.

e. Wheeled transportation.

Vehicle	Capacity	Normal load	Pounds ^a
2 trucks, 1½-ton----- 1 light wagon, trailer type.	6,000 1,500	Supply truck: 1 grain ration ^b ----- 1 day's supply gasoline and oil. Fuel when carried ^b ----- Available capacity ^d ----- Baggage truck: Troop, baggage and equip- ment, ^{b, c} ----- 1 day's supply gasoline and oil. Available capacity ^d ----- Light wagon: Ammunition ^b ----- Available capacity ^d -----	1,876.0 344.0 93.0 687.0 1,600.0 344.0 1,056.0 1,167.5 332.5
Total-----	7,500	Total available capacity ^d -----	5,424.5 2,075.5

^a Based on troop of 5 officers, 127 enlisted men, and 153 horses.

^b Includes $\frac{1}{2}$ of the supplies of squadron headquarters.

^c Troop baggage and equipment. This includes essential items for the upkeep of the troop (men and animals) to insure combat efficiency. It is based on an approximate 30 days' supply for a troop.

^d The above available capacity may be used for transporting:

1 day's hay or part thereof.

1 grain ration.

1 field ration.

Canteen rolls (about 9 pounds each).

Unconsumed portion of day's field or grain ration.

Kitchen and ration packs.

Ammunition packs.

Additional ammunition.

Additional equipment.

362. Machine-gun and headquarters troops.—*a.* Making due allowance for the differences in number of men, animals, packs, and light wagons, the machine-gun troops and head-

quarters troops carry their supplies, ammunition, and baggage in a manner similar to that of the rifle troops.

b. One truck is required to carry the baggage and equipment of regimental headquarters as prescribed by the regimental commander. Two trucks are required for the transportation of the band.

c. In the machine-gun troops, the additional light wagon provides the cargo capacity required to carry the additional ammunition requirements of these troops.

363. Principles of loading.—Regulations do not prescribe the method of loading the various vehicles. This is a troop, squadron, or regimental function, depending upon the supply and tactical situation. Trucks which are part of the supply section of the regimental combat train should be loaded with class I supplies. Trucks loaded with baggage and equipment are part of the baggage section.

MECHANIZED CAVALRY

364. Basis of supply.—The supply of a mechanized regiment is based on the principle that it transports the necessary supplies for two days' operation; one day within each organization and one day in the combat train.

365. Tactical limitations of supply.—*a.* The limitation to the distance of tactical operation is the mileage capacity of the combat vehicles' fuel tanks.

b. On any mission requiring more than a normal day's operation, higher authority should make available additional transportation of equal mobility to that of the unit trains. This attached transportation should transport supplies sufficient for the execution of the mission.

366. Strategical limitations of supply.—The limitations to the distance of strategical operation of supply are based upon the following considerations:

a. The cargo capacity of the combat trains which is fixed by assignment.

b. The mobility of the combat trains which is governed by the normal capability of vehicles and personnel. These capabilities cannot habitually be exceeded with impunity.

c. The location of distributing points, a variable, dependent upon the decision of higher authority. Distributing points

should be located so that in maintaining the flow of supplies from the distributing points to the main body, the trains should not exceed a normal marching distance each day. This may require the daily forward displacement of the distributing point by higher authority in an amount equal to a normal day's march of the main body each day following which the forward displacement of the main body has been equal to that amount.

367. Procedure.—The procedure is the daily replenishment of supplies consumed by the combat elements from the service trains, or if this is impracticable, from the unit combat trains. This is usually accomplished at the end of a day's march and is always desirable just prior to combat. After delivering supplies to the combat elements, the unit combat trains customarily proceed to the distributing point or railhead established by the next higher echelon of supply, where they are refilled. They then proceed to their bivouac, there to await the next call for supplies from the combat elements. It is not necessary for the trains actually to physically contact the combat elements in order to deliver the supplies. If necessary these may be dumped at a safe place and issued to the combat elements when contingencies permit, thus permitting the trains to withdraw promptly.

368. The regiment.—*a.* Supplies for the regiment, other than class I supplies, are requisitioned and procured by the regimental supply section from higher authority. Regimental requisitions are consolidated from requisitions or stated needs of the several troops. When such supplies are received they are issued to the troops in accordance with the needs and in a manner best suited to the situation. The regimental supply section as such has no reserves of classes II and III supplies.

b. Normally the regiment is the smallest unit which will be supplied by the supply services. In case of the detachment of troops or squadrons from the regiment, sufficient transportation will be provided either from the regimental combat train or by the unit to which attached. Before departing upon detached missions, units of the regiment should assure that supply plans have been made.

CHAPTER 3

EVACUATION

SECTION I

EVACUATION OF PERSONNEL

369. Horse cavalry.—*a. Medical squadron.*—The medical squadron of the cavalry division is responsible for the collection and clearing of all casualties in the division. Whenever necessary, the medical squadron is reinforced by additional medical units. When elements of the division are detached, sufficient medical personnel and equipment of the medical squadron should be attached to perform the necessary care and evacuation of casualties.

b. Medical detachments.—Medical detachments with units of the cavalry division are so organized that they will be provided with medical personnel, equipment, and facilities for the care and evacuation of sick and limited battle casualties under field conditions. The medical detachments are charged with first-aid treatment only, collecting, classifying, and tagging all casualties within the organization with which they serve.

370. Mechanized cavalry.—Medical detachments with mechanized cavalry have the same functions as those with horse cavalry. In general, the collecting requirements imposed upon the medical service in mechanized combat will be greatly reduced inasmuch as the majority of casualties will occur in vehicles which after combat will evacuate the casualties to the nearest medical installation.

SECTION II

EVACUATION OF ANIMALS

371. Horse cavalry. — *a. Regiment.*—The veterinary personnel and equipment which form a part of the medical detachment with the cavalry regiment are charged with the evacuation of sick and wounded animals within the regiment. Additional

veterinary personnel should be attached to the regiments when these are detached from the cavalry division.

b. Division.—Veterinary personnel and equipment which are organically part of the medical service of the cavalry division are responsible for the evacuation of animals within the division.

SECTION III

MAINTENANCE AND EVACUATION OF VEHICLES

HORSE CAVALRY

372. Regiment.—A repair truck and suitable personnel are provided to perform only limited maintenance under the direction of the headquarters troop commander. On the march, the repair truck falls out momentarily to render assistance of a temporary nature or to direct the vehicle to await the arrival of the maintenance sections of the supply services. Normally the repair truck is with the transportation platoon. Combat equipment receives priority of the maintenance facilities. Such maintenance as cannot be performed by the regiment or for which it is not responsible is performed by the maintenance sections of the supply services. These may be attached to the regiment when it is detached from the division.

373. Separate units.—Separate units having motor equipment are equipped with repair trucks and have personnel for limited maintenance. The maintenance of their motor vehicles is generally the same as for the cavalry regiment.

374. Division.—The motor maintenance sections of the supply services which are organically a part of the cavalry division extend maintenance by regiments and separate units. They also collect vehicle casualties, complete repairs, or evacuate the vehicles to higher motor maintenance sections. When elements of the division are detached, maintenance personnel, supplies, and equipment may be attached thereto.

MECHANIZED CAVALRY

375. Troops.—*a.* Troops are responsible for only limited maintenance. This is performed by the maintenance personnel and equipment belonging to the troop under the direction of the troop commander who cannot neglect his command or impair

the movement thereof by concerning himself with occasional vehicular casualties.

b. On the march the troop repair truck falls out momentarily to render assistance of a temporary nature to any of its troop vehicles or to direct the vehicle to await the arrival of the regimental maintenance platoon. It is essential that the troop repair truck be present with its troop at every halt.

c. In the advance to combat, the troop repair truck remains with its troop until the troop moves from its final assembly position to attack. On being released by the troop commander, it goes to the regimental service park which has been designated in regimental orders.

d. Troop repair trucks at the service park are released to the troops immediately following combat. Their first responsibility is to care for those vehicles which are capable of further effort; their second, to assist the regimental maintenance platoon in collecting vehicle casualties when their organization does not advance.

376. Regiment.—*a.* The regimental maintenance platoon is responsible under the direction of the motor officer for maintenance and repair which cannot be accomplished by the troops and for which time, equipment, supplies, and personnel are available within the platoon. Repairs that cannot be performed by the regimental maintenance platoon are made by the maintenance sections of the supply services of higher headquarters. Maintenance sections of the supply services may be attached to the regiment when the situation demands.

b. On the march, the maintenance platoon performs maintenance and repair beyond the troop's capacity. Vehicles that cannot be repaired are either taken to designated vehicle collecting stations or are left to be repaired by the maintenance sections of the supply services. The maintenance platoon during an advance does not concentrate its efforts on the repair of vehicles when the time for repair is problematical. The mobility of the maintenance platoon should not be reduced by towing vehicles whose usefulness or necessity in combat in the immediate future is doubtful.

c. Orders for combat will designate a service park which is established by the motor officer. Prior to combat the maintenance platoon from this service park assists the troop main-

tenance personnel in preparing combat vehicles for action. Immediately following combat, vehicle casualties are collected by the maintenance platoon. Those requiring maintenance for which time is not available, or for which supplies and spare parts are not obtainable within the time before the maintenance platoon moves, are evacuated to, left for, or collected by the maintenance sections of the supply services. These maintenance sections of the supply services may or may not have been attached to the regiment.

d. The maintenance platoon furnishes to the troops limited supplies and equipment which are necessary in the maintenance work performed by troop mechanics.

SECTION IV

PRISONERS OF WAR AND STRAGGLERS

377. Military police.—In cavalry actions, due to the small number of military police and the wide front over which the cavalry may operate, straggler lines are rarely designated or operated. Stragglers are apprehended by independent military police patrols which are designated to patrol areas in rear of the combat troops.

378. Prisoners of war.—Prisoners of war are generally collected by organizations and sent under guard to a collecting point for prisoners of war. From the collecting point they are evacuated by any means available to designated points in rear as directed in orders.

SECTION V

BURIALS

379. Burials.—In a small unit the dead are collected and buried under the direction of the supply officer, assisted by the chaplain when present. Burials are usually made in local cemeteries. In a larger unit, burials may be either by organizations or by details under the direction of the quartermaster. The limited number of quartermaster service troops available will usually require that all burials be handled by organizations.

APPENDIX I

GLOSSARY AND REFERENCES

1. Definitions.—The following definitions apply to all three volumes of the Cavalry Field Manual:

Accompanying weapons.—Weapons, other than those pertaining to cavalry, which may be attached.

Advance guard.—A security detachment designed to protect the head of a marching force and cover its forward movement.

Air scouts.—Soldiers detailed to furnish warning of the approach of hostile aircraft.

Alinement.—A line upon which several elements are formed or are to be formed, or the dressing of several elements upon a line.

Approach.—The conduct of a command toward the enemy, through the zone in which losses may be anticipated from the enemy's artillery and long-range automatic fire, with a view to engaging the enemy.

Armored car.—An armed and armored wheeled motor vehicle designed primarily for reconnaissance.

Assault.—The final rush to close with the enemy; to determine the issue by hand-to-hand encounter. The assault when delivered by mounted troops is termed the "charge."

Assembly.—The regular grouping, in close order, of the elements of a command.

Attack.—An offensive action of any kind after contact has been established with the enemy.

Base.—The element on which a formation or movement is regulated. The base may be a trooper, a set of twos or fours, a squad, a platoon, or a larger unit. When the base is a single trooper in ranks, he may be termed the "guide."

Car commander.—The senior member of the crew present with the car.

Car crew.—The personnel serving a mechanized cavalry vehicle.

Car park.—An area used by a mechanized or motorized unit to assemble its vehicles.

Center.—The middle point or element of a command. If the number of elements considered are even, the right center element is considered the center element.

Close order.—Any formation in which units are arranged in line or column with normal or close intervals and distances.

Column.—A formation in which the elements are placed one behind another.

Combat car.—An armed and armored track-laying or convertible track and wheel motor vehicle designed primarily for combat.

Command car.—A command car is a motor vehicle with facilities for the exercise of command.

Containing action (or holding attack).—An attack designed to hold the enemy to his position and prevent him from withdrawing portions of his force for employment elsewhere.

Cossack post.—A security detachment consisting of four men and maintaining a single sentinel.

Covering detachment.—A security detachment.

Demonstration.—An attack delivered on a front where a decision is not sought and made with the object of deceiving the enemy. Also, a specially arranged exercise illustrating the technical employment of troops or the use of certain weapons or equipment.

Deployment.—An evolution in which the command is extended in frontage or in depth, or both, as in forming line from column or in passing from close order to extended order.

Depth.—The space from front to rear of any formation, including the front and rear elements.

Development.—The breaking up of a command into fractional columns and marching them on designated terrain objectives to facilitate the approach and deployment.

Direction of march.—The direction in which the base of the command, whether actually in march or halted, is facing at the instant considered.

Disposition.—The distribution of the elements of a command and the formation assigned to each for the accomplishment of a common purpose.

Distance.—The space between elements in the direction of depth, measured from the rear of one element to the front of the next element.

Dress.—The act of taking a correct alinement.

Drill.—The exercises and evolutions taught on the drill ground and practiced for the purpose of instilling discipline, control, and flexibility.

Echelon.—*a.* Echelon is a step-like formation possessing characteristics of both line and column, the elements successively from the base being disposed to the flank and to the front or rear in such manner that each element is completely or partially unmasked by the preceding element. In the drill of the platoon and the troop the term "echelon" when used as a command denotes a prescribed formation.

b. In battle formation the term echelon is employed to designate the different fractions of a command in the direction of depth, to each of which a principal combat mission has been assigned; for example, the assault echelon, the support echelon, the reserve echelon.

c. The term echelon is also employed to designate the various subdivisions of a headquarters; as, forward echelon, rear echelon.

Element.—One of the subdivisions of a command, such as a vehicle, trooper, two, four, squad, platoon.

Evolution.—A movement by which a command changes its position or formation.

Extended order.—Formations in which the individuals or elements are separated by intervals or distances, or both, greater than in close order.

File closer.—An officer or noncommissioned officer placed in rear of a rank to supervise the men in ranks and see that the orders of the leader are carried out. For convenience, this term is applied to any man posted in the line of file closers.

Flank.—The right or left of a command, in line or column. In speaking of the enemy, the term right flank, or left flank, is used to designate the flank that would be so designated by him.

Flank guard.—A security detachment designed to protect the flank of a marching force.

Foragers.—Mounted troopers abreast of each other with intervals greater than those prescribed for close order.

Formation.—The arrangement of the subdivisions of a command so that all elements are placed in order in line, in column, in echelon, or in any other designated disposition.

Front.—Denotes the direction of the enemy or the portion of our own troops in contact with the enemy.

Frontage.—The space, in width, occupied by a command.

Gait.—Manner of movement of the horse in forward motion; that is, the walk, trot, or gallop.

Gait of march.—The gait at which the base of a mounted unit is moving at the instant considered.

Guide.—An officer, noncommissioned officer, or private in ranks upon whom the command, or element thereof, regulates its march.

Horse length.—A term of measurement. For convenience in estimating space, a horse length is considered 3 yards. Actually, it is about 8 feet.

Interval.—The lateral space between the elements or individuals of a command. Between mounted troopers it is measured from knee to knee. Between dismounted troopers it is measured from elbow to elbow. Between vehicles it is measured from hub to hub.

Leading.—The acts of a commander in controlling his unit by personal direction.

Line.—A formation in which the next lower subdivisions of a command are abreast of one another.

Line of departure.—A line designated to coordinate the launching of an attack, making possible the time coordination of all elements in the attack.

Maneuver.—Movement of troops so designed as to place them in favorable strategic or tactical locations with respect to the enemy. Also a tactical exercise executed on the ground or map, in simulation of war and involving two opposing sides, though one side may be outlined, represented, or imaginary. The plural of the term applies to a series of such exercises, generally involving large bodies of troops in the field in simulation of war.

Mechanized cavalry.—Cavalry whose principal items of equipment consist of self-propelled motor vehicles designed for combat purposes and upon which weapons are mounted.

Mission.—The task imposed by higher authority on the leader of a subordinate unit.

Objective.—A locality which a command has been ordered to reach and occupy or a hostile force which a command has been ordered to overcome.

Outguard.—A security detachment varying in size from a cossack post to a picket usually furnished from the support of an outpost.

Outpost.—A portion of the command so disposed as to provide for the security of the whole command at a halt or when in camp or bivouac.

Pace.—Rate of movement dismounted; as, quick time or double time. Used as a unit of measure, pace signifies a step of 30 inches. Used in reference to gait, pace signifies the rate of speed of the gait.

Patrol.—A platoon or smaller group of troopers detached from the command and operating under the control of a leader with a specific mission, usually related to security or information.

Personnel carrier.—An armed and armored motor vehicle designed primarily for the transportation of personnel and weapons to and on the battlefield.

Rank.—A row or line of men arranged side by side in close order, either mounted or dismounted. Also grade or relative precedence in the military service by virtue of a commission, warrant, or the like.

Rate of march.—The average speed over a period of time including short periodic halts.

Scout.—An individual sent out to reconnoiter.

Scout car.—A motor vehicle used primarily for reconnaissance.

Sector.—The area within which the combat functions or responsibilities of a command are exercised when acting defensively. Its lateral boundaries are usually prescribed and extend from the rearmost element of the command toward the front to a distance at least equal to the maximum range of the weapons of the unit.

Security detachment.—Any subdivision of a unit so disposed on the terrain as to protect the unit from which detached against surprise action by the enemy.

Speed.—The rapidity of movement at any particular instant expressed in miles per hour.

Successive formation.—A movement in which the different elements arrive in their proper places in formation successively.

Wave.—One of a series of lines of foragers, mechanized vehicles, skirmishers, or small columns into which an attack unit is deployed in depth.

Zone of action.—The area within which the combat functions or responsibilities of a command are exercised when acting offensively. Its lateral boundaries are usually prescribed and

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extend from the rearmost element of the command toward the front to the limit of contemplated advance. The term is similarly used during retrograde movement, the boundaries being designated toward the rear.

2. References to other training publications.—*a.* Basic Field Manuals will include subjects needed by two or more arms or services. Field Manuals of the arms will apply to only one arm or service. Those Training Regulations which have not been superseded by Field Manuals will continue in force.

b. The following subjects pertaining to cavalry training are found, as shown, in manuals other than the Cavalry Field Manual:

Subject	Publication	Volume	Part	Chapter
Aerial Photographs, Technical Interpretation of.	TR 210-10.			
Animal-Drawn Transportation.	TR 380-10.			
Army Baker, The.	TM 2100-151.			
Army Cook, The.	TM 2100-152.			
Bands.	BFM.	VIII		
Bugler, The.	TR 75-5.			
Camping Areas.	SOFM.		Three.	
Care of Animals.	TR 360-5.			
Color Sergeant and Standard Bearer.	TR 75-15.			
Combat Intelligence Regulations.	TR 210-5.			
Combat Practice Firing.	BFM.	III	Five.	
Conventional Signs.	TR 190-10.			
Demolitions.	EFM.	II	Two.	3
Defense Against Chemical Attack.	BFM.	I		8
Domestic Disturbances.	BFM.	VII	Three.	
Equipment, Care and Display of.	BFM.	I		3
Field Fortifications.	EFM.	II	Two.	2
Fire Control Instruments.	BFM.	III	Two.	
First Aid.	BFM.	I		2
Guidon Manual, Mounted and Dismounted.	TR 420-series (BFM).	II		
Horsemanship.	BFM.	V	One.	
Horseshoer, The.	TM 2140-15.			
Hygiene.	BFM.	I		2
Instruction, Dismounted, without Arms.	TR 50-15.			
Instruction, Dismounted, with the Rifle.	TR 50-20.			
Instruction, with the Saber, Officers.	TR 25-10.			
Instruments, Care and Adjustment of.	BFM.	III	Two.	
Interior Guard Duty (including Guard Mounting).	BFM.	VI		
Logistical Data.	SOFM.		Two.	
Machine Gun Mathematics.	BFM.	III	Three.	
Map and Aerial Photograph Reading.	BFM.	I		5

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Subject	Publication	Volume	Part	Chapter
Marksmanship, including mechanical training and technique of fire:				
Rifle.....	BFM.....	III	One.....	1
Pistol, Mounted and Dismounted.....	BFM.....	III	One.....	3
Machine Gun (Heavy).....	BFM.....	III	Three.....	
Light Machine Gun:				
Ground Course.....	BFM.....	III	Seven.....	1
Car Course.....	TR 150-50.....			
37-mm Gun.....	BFM.....	III	Four.....	
4.2" Mortar.....	TR 415-35, C 1.....			
Antiaircraft.....	BFM.....	III	Six.....	
Messenger, The.....	TR 75-10.....			
Military Courtesy and Discipline.....	BFM.....	I		1
Military Sketching.....	TR 190-15.....			
Motor Vehicle Operator.....	BFM.....	V	Two.....	
Motor Vehicles.....	BFM.....	V	Two.....	
Musketry.....	BFM.....	III	One.....	6
Organization.....	SOFM.....		Three.....	
Packer, The.....	TM 2100-30.....			
Pack Transportation.....	TR 380-15.....			
Panoramic Sketching.....	TR 190-20.....			
Physical Training.....	BFM.....	I		4
Road Spaces.....	SOFM.....		Three.....	
Saddle Pack.....	BFM.....	I		3
Saddler, The.....	TM 2100-25.....			
Salutes and Honors.....	BFM.....	I		1
Scouting and Patrolling, Dismounted.....	TR 200-5.....			
Shoeing Animals.....	TR 360-25.....			
Signal Communication.....	BFM.....	IV		
Staff Data.....	SOFM.....		One.....	
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Tent Drill (except shelter tent drill).....	TR 225-15, 225-35.....			
Training Remounts.....	TR 360-10.....			
Training Pack Animals.....	TR 360-20.....			
Use of Map in Firing.....	BFM.....	I		5
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